Does Off-board and On-board Gender Diversity Affect Financial Performance? Evidence from Deposit Money Banks in Nigeria

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Abstract Corporate failures have been attributed to the board of directors. Gender diversity of the on-board and off-board directors in the firm could be a remedy for such failures. Studies have focused on gender diversity in boardrooms with few studies on the complementary effect of both on-board members and off-board members. The study, therefore, examined the effect of gender diversity of board members and non-board members on the financial performance of the Deposit Money Banks (DMBs) in Nigeria. The population for this study comprised twenty-four listed DMBs. Purposive sampling was used in this study for selecting 11 Deposit Money Banks whose stocks were actively traded on the stock market during the sample period and for which pertinent data were readily available. The study employed secondary data, sourced from the annual reports of eleven DMBs from 2010 to 2021. The gender diversity composite score was generated using a Principal Component Analysis of the proxies for gender diversity using a Varimax Rotation. While the model was estimated using the panel GLS model which is robust to the residual misnomer. The findings revealed that Female CEOs, Female Executives, Female Non-Executives, and Firm Size had a positive and significant relationship with financial performance while Female employees, Female Audit Committees, Board meetings, leverage and Inflation revealed a negative and significant relationship with financial performance. Specifically, the study concluded that gender diversity maintained a positive and significant relationship with Return on Assets. Our findings imply that board gender diversity may promote the strength of corporate governance and reduce the likelihood of agency conflicts, enhancing performance.

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1 Introduction

A critical issue in corporate governance is the lack of gender diversity on corporate boards (Ahmed et al., 2017). Increasing gender diversity in top executive positions and the boardroom has become a major concern for regulatory bodies, notably in Nigeria. The management of an organization is allegedly the responsibility of the board of directors. The management of the company's operations in the interests of its shareholders and the company as a whole is one of the board of directors' main responsibilities. There is mounting evidence in academic and business literature that when management boards and teams are generally more diverse, including gender, businesses see significant improvements (Offermann & Foley, 2020; Schopohl et al., 2021). The board of directors, a crucial component of any company, is in charge of steering the firm's direction and defending the shareholder's interests (Abdullah, 2004). In contrast, boards of directors have come under fire for failing businesses and a decrease in shareholder value (Abidin et al., 2009). Several of the explanations given for company failures include lack of control by the managers that are pursuing their self-interests, ineffective monitoring by the board, and the board's lack of accountability to shareholders (Abidin et al., 2009) and diverse board.

The board's diversity has been described in several different ways. Components including gender, age, country, ethnicity, educational background, and membership in the organization could be used to define board diversity (Campbell & Mínguez-Vera, 2008). Gender diversity is regarded as an organisation's fair representation of individuals of diverse genders and a proportionately equal number of women and men. Gender diversity and having a female on the board could improve the effectiveness of the company. Thus, more liquidity and lesser debt may be features of female-led businesses, and these indicators are critical for assessing financial health. (Hedija & Němec, 2021). Additionally, it may be a crucial factor for prospective investors (Smith et al., 2021). Literature asserts that gender diversity may send signals to investors and other external stakeholders that affect how they assess a company's value (Dobbin & Jung, 2011; Smith et al., 2021) and also greater corporate social responsibility. The argument for more female board representation often hinges on four criteria, according to Doldor et al. (2012): enhancing performance, gaining access to a larger pool of talent, greater responsiveness to the market, and strengthening corporate governance. Women are believed to also help improve stock price informativeness (Gul et al., 2011) and lower operational costs (Chakrabarty & Bass, 2014). On the other side, we should also emphasize that there is a chance that diversity could result in lower company performance if decision-making takes longer as a result of diversity. In that situation, the board's heterogeneity may result in conflict and divergent goals, which would reduce the effectiveness of decision-making. Particularly, diversity may be linked to value destruction rather than value creation for businesses engaged in sectors that need

rapid responses to market shocks (Smith et al., 2006). Therefore, it appears that gender diversity may have a double-edged effect, benefiting some businesses' performance while detrimental to others.

Legally enforceable quotas for women on corporate boards have been implemented in several European Union nations (Germany: 30 percent, Belgium, Italy, Greece: 33 percent, Austria: 35 percent, France: 40 percent) others have enacted laws requiring corporate governance or made suggestions to promote equality (Desvaux et al., 2017). In Norway, the percentage of women on the board must be at least 40% (Carter et al., 2010; De Cabo et al., 2019). Globally, there has been growing discussion regarding legislation requiring women to serve on boards, Nigeria includes; some nations that have not yet set a minimum standard for the anticipated percentage of women on company boards. Although the Board in Nigeria is given the duty of ensuring that the Board and its committees effectively carry out their duties without jeopardizing competence, integrity and independence, this duty is ensured by an appropriate balance of diversity and skills (which includes gender and experience).

The Nigerian banking sector has had recurring financial crises over the past two decades. In response, the sector has undergone several reforms, the most recent of which was the recapitalization and consolidation reform, which was implemented in 2004 and also reform on the need to address the global financial crisis (2010–2012). The crisis among many other things is due to weak corporate governance mechanisms (Ogundele et al., 2022). Corporate governance has been found to affect firms' financial performance. Banks have unique characteristics that make them complex commercial organizations and necessitate rigorous supervision. Banks are unique economic institutions that play an essential role in financial intermediation, liquidity, information, the payments system and maturity and denomination change (Fama, 1985). Also, banks play a vital role in the development of any economy. The health of the financial sector is crucial in any economy as its failure can disrupt the economic development and growth of the nation (Ogundele et al., 2020).

The bank's board is crucial in attaining effective governance due to its monitoring and advising roles. Diversity on the board, particularly in terms of gender diversity, has grown in relevance in terms of corporate governance in the banking sector, women play an even more significant role, particularly in promoting more responsible and sustainable management in the wake of previous bank failures, according to Birindelli et al. (2019). The benefits of gender diversity are increasingly being acknowledged as a way to improve corporate governance. The conversation regarding women directors has persisted due to the underrepresentation of women in boardrooms and the growing awareness of the potential benefits of gender-diverse boards. Issues in bank governance threaten the economy as a whole, other financial institutions, and the financial system as a whole.

Following multiple corporate scandals and financial crises, an important issue has arisen: would things have been different if more women had led firms in Nigeria and across the world? Corporate scandals like those at Enron, Tyco, WorldCom, and Parmalat have likewise heightened attention on the influence of gender diversity on the financial performance and value of the firm. Following these scandals, several

practitioners have campaigned for increased board gender diversity. There is political campaigning in Nigeria for women to be allocated 35 percent of political posts (Nnabuife et al., 2015). The Nigerian Code of Corporate Governance 2011 are silent on the number of women to be nominated to company boards. The push to increase the number of women in Nigeria has created a demand for empirical research on gender diversity. Several studies, including a study by Credit Suisse Research Institute in 2016, analysed the gender diversity of boards across 3000 companies globally. They found that companies with a higher proportion of women on their boards tended to have higher returns on equity, higher valuations, and better stock performance. However, it is important to note that this study focused on companies globally and did not specifically examine Nigerian DMBs, and therefore this provides further insight into this area. Also, Studies (Gallego-Álvarez et al., 2010; Lückerath-Rovers, 2013; Hedija & Němec, 2021) have focused on the gender diversity of members in boardrooms with little or no study on the complementary effect of both female members in the board and female members outside the board especially in Nigeria, to the best of the author's knowledge. Hence, the need to consider the effect of gender diversity and the financial performance of Nigerian banks.

2 Literature Review

2.1 Theoretical Review

According to theories, gender diversity in board members can have an influence on performance through a variety of mechanisms. Various theories explain the relationships between gender diversity in an organisation and the performance of firms in economic literature. These theories include most commonly agency theory, upper echelons theory, resource dependency theory and social identity theory (Ali et al., 2011; Christiansen et al., 2016; Campbell & Bohdanowicz, 2015).

Ellwood and Garcia-Lacalle (2015) stated that according to upper echelons theory, the qualities of the board of directors such as experiences, personalities, and values influence firm outcomes. Males and Females possess different qualities; therefore, gender diversity could influence the performance of firms. Also, Christiansen et al. (2016) affirm that greater representation of women on the boards can boost innovation and critical thinking. Upper echelons theory may also be used to better understand the relationship that exists between gender diversity on the board and financial performance in the banking industry. According to this theory, board members' traits such as age, gender, education, and job experience might impact the organization's strategic decisions. Overall, the idea implies that gender diversity in senior roles can favorably benefit a bank's strategic decisions and financial performance. Companies that promote gender diversity at the highest level may benefit from a broader range of ideas and experiences, resulting in enhanced decision-making and, ultimately, enhanced financial performance.

One of the key ideas used in explaining the favorable influence of board gender diversity on financial performance is the agency theory. Gallego-Álvarez et al. (2010) stated that; gender diversity is among the vital essential corporate governance mechanism for organisations, according to the agency theory. Reguera-Alvarado et al. (2017) stated that board gender diversity provides greater control because a wide range of viewpoints and perspectives heightens the independence of the board. As a result, gender-diverse boards can be a cost-cutting tool for agency costs (Reguera-Alvarado et al., 2017). According to agency theory, greater participation of women on boards may improve financial performance by managing the firm's operations and better monitoring (Campbell & Bohdanowicz, 2015). Members of the board who are females are more involved, ask more questions, and come to meetings more prepared than the male board members (Adams & Ferreira, 2009). All of these features may contribute to a better decision-making process.

The resource dependency theory emphasized the impact of external factors on organisational behavior; within the context of resource dependence theory, managers may take efforts to minimize dependence (Hillman et al., 2009). According to this theory, organizations with more diverse workforces are better equipped to recruit and retain talent, especially from underrepresented groups. This allows the organization to have access to a greater pool of talents and expertise, providing a competitive advantage and perhaps leading to improved financial performance. According to Pfeffer (1972), boards help companies to reduce reliance and obtain resources. Female gender on boards can increase business performance for the reason that women contribute unique and valuable perspectives to the board.

Social identity theory proposed. It is another reason diversity might have a detrimental influence. Given the social identity theory, when we first meet someone, we categorize them as belonging to an in-group (the same group as us) or an out-group (not belonging to our group). It claims that diversity lowers productivity and income by lowering group cohesion and commitment. Based on a combination of Social Identity Theory (Turner et al., 1987), this position says that in gender-diverse organizations, people are more likely to build positive connections with ingroup members (those of their gender) than with outgroup members (those of a different gender). This can lead to stereotyping and conflict as well as a breakdown in group unity and collaboration, diminishing efficiency (Ali et al., 2011).

2.2 Empirical Review

Gender diversity on a bank's board is critical for decision-making clarity and innovation (García-Meca et al., 2015). The varied and balanced board includes people with diverse skills, expertise and experience to supplement the firm's performance. Many empirical papers have previously been published that investigate the relationship that exists between women in leadership and firm performance of firms. Though, the outcomes are not consistent. Even though some literature discovered a positive effect between gender-diverse boards and financial performance

(Carter et al., 2003; Lückerath-Rovers, 2013; Khan & Vieito, 2013; Brahma et al., 2021; Arvanitis et al., 2022) others discovered neither (Miller & del Carmen Triana, 2009) nor a negative effect (Adams & Ferreira, 2009; He & Huang, 2011; Ahern & Dittmar, 2012). Hereafter, the proof of the effects of gender-diverse boards and financial performance remains inconclusive. Palvia et al. (2015) stated that women's presence at various managerial levels and on corporate boards varies greatly across all nations. Academics believe that having women on boards improves banks by lowering risks and promoting prudent financial decisions. Furthermore, by elevating women to positions of power, banks may give vital inspiration to their whole pool of female employees while also strengthening the process of sustainable growth (Birindelli et al., 2019). Further, Dadanlar and Abebe (2020) suggested that women CEO-led companies have a low probability of discrimination lawsuits. Luo et al. (2017) emphasized that larger board female representation is related to lesser levels of real activity manipulation. Board gender diversity is among the most contentious subjects in banking literature. The major goal is to investigate the effect of female board presence on bank financial performance. To the best of the authors' knowledge, most papers considered gender diversity in the board room while this paper will be considering the complementary effect of gender diversity on and off the board room.

3 Methodology

3.1 Population, Sample and Sources of Data

The article mainly focused on Nigeria's listed Deposit Money Banks (DMBs). Twenty-four DMBs that are listed on the Nigerian Exchange Group as of 2021 make up the study's population. Purposive sampling was used in this study for selecting 11 Deposit Money Banks whose stocks were actively traded on the stock market during the sample period and for which pertinent data were readily available. The audited financial statements of the chosen DMBs and the Nigerian Exchange Group factbook were used as sources for data for the years 2010 to 2021. The data used includes the data from the eleven DMBs in Nigeria. The rationale for selecting only banks trading as of first January 2010 is because this was the period that the regulatory authority required the Deposit Money Banks to commence a uniform accounting period.

3.2 Model Specification, Measurement of Variable & Data Collection Technique

The Independent variables for this study were categorized into two basic components; namely; Off-Board gender diversity, and On-Board gender diversity. Off-Board gender diversity is a category of employees that are not members of the board while On-Board gender diversity are categories of individuals that are majorly board members. The dependent variable for this study is the Return on Assets (ROA). Return on Assets (ROA) is considered one of the important measures of financial performance because it provides insight into a company's ability to generate profits from its assets. ROA is a standardized financial metric that is widely used and accepted in the business community. This allows for easy comparisons across different companies and industries. It facilitates benchmarking and helps investors make informed decisions.

In ensuring the robustness of the result, the control variables include board meetings, firm age, firm size, inflation, and leverage. The variables classified under On-Board Gender Diversity are, Female CEO (FCEO) is a dummy variable in banks where the CEO is a woman that equals 1 and 0 otherwise; Female Chairperson (FCH)—Dummy variable that equals 1 in banks with a woman as the Chairperson and 0 otherwise; Female Risk Committee Gender Diversity (FRC) is measured as the number of female risk committee members divided by risk committee members size, Female Audit committees (FAC)—proportion of women in the audit committee in relation to the total audit committee; Female Executive to Total Executive (FETE) - Proportion of women as executive directors over total members executive directors; Female Non-Executive to Total Non-Executive Directors (FNTN)—Proportion of women as no executive directors over total non-executive directors; while the variable classified under Off-Board Gender Diversity is Employee gender diversity (EGD) is the equitable or fair representation of individuals of various genders from entry-level to the rank directly behind the assistant general manager.

The following is the regression model used to examine the relationship between on and off-board gender diversity and financial performance.

$$ROA_{it} = X_{it} + FRC_{it} + FCEO_{it} + FCH_{it} + FAC_{it} + FETE_{it} + FNTN_{it} + +EGD_{it} + LEV_{it} + AGE_{it} + SIZ_{i} + INF_{it} + BMET_{it} + \varepsilon_{it} \quad (1)$$

Following the aforementioned literature and in an attempt to answer the research objective, this paper employs a quantitative research method. This research method is regarded as suitable for achieving the research objectives which aim to investigate the effect of gender diversity on the financial performance of the DMBs which is the core focus of this paper. This paper employed a panel data technique. The study estimates regressions including the variables while controlling for the bank-specific and microeconomic variables. For further and robust analysis, the gender diversity composite score was also generated using a principal component analysis of the

proxies for gender diversity using a varimax rotation. While the model was estimated using the panel GLS model which is robust to the residual misnomer.

4 Results and Discussion

4.1 Descriptive Statistics

In examining the effect of on-board and off-board gender diversity and financial performance of the Nigerian DMBs; Table 1 shows the mean, standard deviation, kurtosis and skewness, values of variables in the model.

The summary statistics for the variables being examined are shown in Table 1. It can therefore be seen that on average Female representative in the risk committee is 0.198, with a standard deviation of 0.105. This depicts that an average of 19 percent of females constitute the risk committee. Female Executive to Total Executive Directors has a mean value of 0.161 and a standard deviation of 0.171 while Female Non-Executive in relation to Total Non-Executive Directors had a 0.618 mean value with a standard deviation of 0.277. The mean value for Board Meetings was 6.675 with a 2.76 standard deviation, which shows that an average of about 7 meetings were held in a year. The firm age averaged 50.636 with a standard deviation value of 33.726. Leverage had a mean value of 0.063 with a standard deviation of 8.452. The inflation Rate reported a mean value of 0.119 and 0.027 standard deviation.

Table 1 Descriptive statistics

	Mean	Std. Dev.	skewness	kurtosis
FRC	0.198	0.105	−0.218	2.27
FCEO	0.101	0.302	2.651	8.029
FCH	0.126	0.333	2.253	6.078
FAC	0.120	0.344	−5.416	33.316
FETE	0.161	0.171	0.830	2.972
FNTN	0.618	0.277	0.398	4.936
EGD	0.4440	0.3954	4.4192	25.139
BMET	6.675	2.76	1.480	4.84
AGE	50.636	33.726	0.796	2.491
LEV	0.063	8.452	−10.845	118.749
INF	0.119	.027	0.158	2.035
SIZ	9.052	0.54	−1.472	8.703

Source: Authors' Computation (2023)

4.2 Correlation Matrix

The correlation analysis between the relevant variables was presented in Table 2. It shows that the variables' overall correlation is negligibly low—less than 0.6—across the relationships. The result shows that the explanatory variables do not have a correlation value of up to 1 with each other. This implies that the model was free from the problem of multicollinearity. The correlation results also showed that all variables display considerable variation among each other, thereby justifying the use of panel estimation techniques. According to Hair et al. (2014), a correlation of less than 0.9 cannot cause serious multicollinearity issues.

4.3 Heteroscedasticity Test

White's test
H0: Homoskedasticity
Ha: Unrestricted heteroskedasticity
chi2(27) = 76.42
Prob > chi2 = 0.0000
Cameron & Trivedi's decomposition of IM-test.

The homosckedastic of the residual is yet another result of a classical regular least square. The study used a white test, Cameron & Trivedi's heteroskedastic, which is superior when the error term is not normally distributed. The three model shows that there is the problem of heteroskedastic as indicated by a p-value of 76.420(0.000) which is less than 5%.

To measure the effect of on- and off-board gender diversity on the financial performance of sampled Nigerian deposit money banks, a multivariate analysis employing panel regression was used. The results are displayed in Table 3. Here, the granulated representation of gender diversity was used using seven variables: FRC, FCEO, FCH, FAC, FETE, FNTN & EGD. Different panel regression estimators were taken into consideration to increase the regression analysis's robustness. The first Model is the Pool OLS which is followed by the Random effect Model and Panel GLS. Panel GLS was employed as Model 3 to further confirm the coefficient estimations' robustness. Panel GLS adopts feasible GLS estimators to achieve robust standard errors, particularly robust to possible residual misnomers like autocorrelation and heteroscedasticity that may bias the result. From the result, as shown in Table 4, the model suffers from Heteroskedasticity. Instead of that, GLS is more appropriate when the model is suffering from heteroskedasticity. The Wald test in Table 5 revealed that the P value is less than 5%. When the p-value associated with independent variables in a regression model is less than 0.05, the Wald chi-square test suggests that the variable is statistically significant and has a meaningful impact on the dependent variable (Return on Asset).

Table 2 Correlation matrix

Variables	FRC	FCEO	FCH	FAC	FETE	FNTN	EGD	BMET	AGE	LEV	INF	SIZ
FRC	1.000											
FCEO	0.23*	1.000										
FCH	0.25*	0.125	1.000									
FAC	0.47*	0.032	0.090	1.000								
FETE	0.47*	0.140	0.093	0.45*	1.000							
FNTN	0.29*	−0.04	−0.00	0.41*	0.28*	1.000						
EGD	−0.08	−0.3*	0.111	−0.00	−0.09	0.174	1.000					
BMET	0.070	0.163	−0.02	0.42*	0.38*	0.158	0.110	1.000				
AGE	0.168	0.039	0.21*	−0.3*	−0.3*	−0.15	0.105	0.080	1.000			
LEV	−0.03	0.043	0.036	0.091	0.094	−0.02	0.049	0.058	−0.03	1.000		
INF	0.104	0.095	0.160	−0.04	0.007	0.043	−0.03	0.068	0.024	−0.04	1.000	
SIZ	0.31*	−0.09	0.31*	0.29*	0.25*	0.33*	0.51*	0.162	0.19*	0.51*	0.031	1.000

Source: Authors' Computation (2023)
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Table 3 Regression estimates (granulated measure of gender diversity)

	(1)	(2)	(3)
Variables	Pool OLS	Random Effect	Panel GLS
FRC	0.03	0.03	0.03
	(0.03)	(0.04)	(0.04)
FCEO	0.04*	0.04*	0.04*
	(0.01)	(0.01)	(0.01)
FCH	0.00	0.00	0.00
	(0.00)	(0.01)	(0.01)
FAC	−0.02*	−0.02***	−0.02**
	(0.01)	(0.01)	(0.01)
FETE	0.12**	0.12**	0.12**
	(0.06)	(0.06)	(0.06)
FNTN	0.04*	0.04**	0.04*
	(0.01)	(0.02)	(0.01)
EGD	−0.01**	−0.01**	−0.01**
	(0.01)	(0.01)	(0.01)
BMET	−0.00*	−0.00*	−0.00*
	(0.00)	(0.00)	(0.00)
AGE	−0.00	−0.00	−0.00
	(0.00)	(0.00)	(0.00)
LEV	−0.10*	−0.10*	−0.10*
	(0.00)	(0.00)	(0.00)
INF	−0.19**	−0.19***	−0.19**
	(0.08)	(0.10)	(0.10)
SIZ	0.05*	0.05*	0.05*
	(0.01)	(0.01)	(0.01)
Constant	−0.20**	−0.20*	−0.20*
	(0.08)	(0.07)	(0.06)
Observations	130	130	130
Number of Firms	11	11	11

Source: Authors' Computation (2023)
Robust standard errors in parentheses *p < 0.01, **p < 0.05, ***p < 0.1

Table 4 Heteroscedasticity test

Source	chi2	df	P
Heteroskedasticity	76.420	27	0.000
Skewness	8.450	6	0.207
Kurtosis	2.530	1	0.112
Total	87.400	34	0.000

Source: Authors' Computation (2023)

Table 5 Wald test

Statistics	Value
Wald Chi 2	191,937
P value	0.000

Source: Authors' Computation (2023)

However, for this study, the panel GLS model (model 3) is used to explain the relationship between the dependent variable (ROA) and the explanatory mix. Specifically, out of the seven on-board and off-board gender diversity variables; five variables revealed significant effects on the financial performance of DMBs. The variable for onboard gender diversity that showed significant effects are FCEO, FAC, FETE, and FNTN while the only proxy for off-board gender diversity which is EGD also revealed a significant effect on financial performance. It must also be noted that FCEO, FETE, and FNTN revealed a positive relationship with financial performance while EGD and FAC negatively affected ROA. Also, the following Control variables (BMET, LEV, INF and SIZ) revealed a significant effect on the financial performance of the DMBs. It must also be noted BMET, LEV & INF share a negative relationship with financial performance while firm size revealed a positive and significant effect on performance.

Specifically, FCEO (p-value = 0.000, t-value = 3.77 & Coefficient = 0.044) positively and significantly drives financial performance (ROA). This shows strong evidence that a female Chief Executive Officer would positively drive the financial performance of the DMBs. This means that companies with female CEOs tend to achieve higher ROA compared to companies without female CEOs. Having a female CEO brings a different perspective and set of experiences to a company's leadership. Women may bring unique insights and approaches to problem-solving, decision-making, and strategic planning. This diversity of perspectives can lead to more innovative and effective strategies that contribute to improved financial performance. A positive value in the regression coefficients indicated that the DMBs led by female CEOs are at the higher reward of an upturn in their financial performance. The result agrees with Jalbert et al., 2013. Also, FNTN (p-value = 0.006, t-value = 2.73 & Coefficient = 0.039) and FETE (p-value = 0.028 t-value = 2.20 & Coefficient = 0.125). 033, t = 2.07 & t = 0.023) positively and significantly drives financial performance (ROA). The given statistics concerning FNTN indicates that a higher proportion of female non-executive directors relative to the total number of non-executive directors has a positive and significant relationship with performance. This suggests that having more female representation in non-executive roles is associated with improved performance outcomes. Companies with gender-diverse boards, including female NEDs and executive directors, often have a positive reputation for being inclusive and progressive. This can enhance the company's brand image, attract customers, and strengthen relationships with various stakeholders. The findings revealed that FAC (c = −0.023, t = −2.07 & p = 0.039) and EGD (p-value = 0.026, t-value = −2.23 & Coefficient = −0.012) which is an off-board gender diversity; negatively and significantly drives financial performance (ROA). Gender diversity among employees may be an indication of underlying

gender disparities in the workplace, such as unequal opportunities for career advancement, wage gaps, or biased promotion practices. If female employees face discrimination, systemic barriers that limit their career growth and progression, it can result in lower motivation, reduced commitment, and ultimately, decreased financial performance.

Leverage showed a negative and significant effect on the financial performance of DMBs. ($c = -0.104$, $t = -267.52$ & $p = 0.000$). In other words, higher levels of leverage tend to be associated with lower financial performance. As leverage increases, banks may need to pay higher interest payments on their debt. This can lead to increased costs, reducing the bank's profitability and overall financial performance. Leverage could signal problems in the company's management and create low confidence in the company, negatively affecting an entity's financial performance. The result is also in consonance with Ibhagui and Olokoyo (2018) and Akinadewo et al. (2023). Firm size revealed a positive and significant effect on the financial performance of DMBs. ($c = -0.046$, $t = 4.61$ & $p = 0.000$). The result aligns with Satriyo and Harymawan (2018). According to economic theory, large firms can experience economies of scale and scope, reduce costs via specialization, and more effective implementation of operations.

4.4 Panel GLS

ROA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Gender Diversity	0.010	0.004	2.71	0.007	0.003	0.018	*
Board Meeting	−0.005	0.001	−3.92	0.000	−0.007	−0.002	*
Age	0.000	0.000	−1.65	0.098	0.000	0.000	***
Leverage	−0.104	0.000	−279	0.000	−0.104	−0.103	*
Inflation Rate	−0.027	0.114	−0.23	0.815	−0.250	0.197	
Firm Size	0.036	0.007	5.13	0.000	0.022	0.049	*
Constant	−0.174	0.063	−2.78	0.005	−0.296	−0.051	

Mean dependent var	0.131	SD dependent var.	1.040
Number of obs	130.000	Chi-square	116044.064
Prob > chi2	0.000	Akaike crit. (AIC)	−349.469

Source: Authors' Computation (2023)
*p < 0.01, **p < 0.05, ***p < 0.1

Table 5 shows the Panel GLS model which is used to explain the relationship between the dependent variable ROA and the explanatory mix. The gender diversity score was derived from the Principal Component Analysis of the proxies for gender diversity using a varimax rotation (see Table 4.6 in the appendix). Specifically, it can be seen that gender diversity maintained a positive and significant relationship with ROA. By implication, a unit change in gender diversity increases ROA by 1%,

ceteris paribus. The result also shows strong evidence that Firm size and Gender diversity could drive Return on Assets. It should be noted that all other control variables share a negative relationship with performance except the Inflation Rate & Board meeting.

5 Conclusion and Recommendation

This paper offers new insight into the impact of board gender diversity on the financial performance of DMBs in Nigeria by exploring both on-board and off-board gender diversity and some other control variables from 2010 to 2021. The study revealed that the variable for onboard gender diversity that showed significant effects are FCEO, FAC, FETE, FNTN while the only proxy for off-board gender diversity which is EGD also revealed a significant effect on financial performance. Also, the following Control variables (BMET, LEV, INF and SIZ) revealed a significant effect on the financial performance of the DMBs. The results have shown that gender diversity on-board and off-board is a significant factor influencing the performance of DMBs. The findings also have interesting practical implications for government policy, management policy and corporate governance. Our findings imply that board gender diversity may promote the strength of corporate governance and reduce the likelihood of agency conflicts, enhancing performance. Thus, the study draws the attention of regulatory authorities especially the Nigerian Securities and Exchange Commission to legislate and mandate the appointment of female board members on the board and also establish a reasonable threshold for females on the board of companies especially the DMBs. This paper contributes to raising awareness about the relevance of gender diversity in the financial sector in Nigeria and advocating for greater inclusion and equality.

References

Abdullah, S. N. (2004). Board composition, CEO duality and performance among Malaysian listed companies. *Corporate Governance: The International Journal of Business in Society, 4*, 47–61.

Abidin, Z. Z., Kamal, N. M., & Jusoff, K. (2009). Board structure and corporate performance in Malaysia. *International Journal of Economics and Finance, 1*(1), 150–164.

Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics, 94*(2), 291–309.

Ahern, K. R., & Dittmar, A. K. (2012). The changing of the boards: The impact on firm valuation of mandated female board representation. *The Quarterly Journal of Economics, 127*(1), 137–197.

Ahmed, A., Monem, R. M., Delaney, D., & Ng, C. (2017). Gender diversity in corporate boards and continuous disclosure: Evidence from Australia. *Journal of Contemporary Accounting & Economics, 13*(2), 89–107.

Akinadewo, I. S., Ogundele, O. S., Odewole, P. O., & Akinadewo, J. O. (2023). Empirical investigation of financial performance determinants: evidence from deposit money banks in Nigeria. *Resmilitaris, 13*(2), 6926–6936.

Ali, M., Kulik, C. T., & Metz, I. (2011). The gender diversity–performance relationship in services and manufacturing organizations. *The International Journal of Human Resource Management, 22*(07), 1464–1485.

Arvanitis, S. E., Varouchas, E. G., & Agiomirgianakis, G. M. (2022). Does board gender diversity really improve firm performance? Evidence from Greek listed firms. *Journal of Risk and Financial Management, 15*(7), 306.

Birindelli, G., Iannuzzi, A. P., & Savioli, M. (2019). The impact of women leaders on environmental performance: Evidence on gender diversity in banks. *Corporate Social Responsibility and Environmental Management, 26*(6), 1485–1499.

Brahma, S., Nwafor, C., & Boateng, A. (2021). Board gender diversity and firm performance: The UK evidence. *International Journal of Finance & Economics, 26*(4), 5704–5719.

Campbell, K., & Bohdanowicz, L. (2015). Corporate governance and the growing role of women in the boardroom. In M. Aluchna & G. Aras (Eds.), *Transforming governance: New values, new systems in the new business environment* (pp. 121–142). Gower.

Campbell, K., & Mínguez-Vera, A. (2008). Gender diversity in the boardroom and firm financial performance. *Journal of Business Ethics, 83*(3), 435–451.

Carter, D. A., D'Souza, F., Simkins, B. J., & Simpson, W. G. (2010). The gender and ethnic diversity of US boards and board committees and firm financial performance. *Corporate Governance: An International Review, 18*(5), 396–414.

Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003). Corporate governance, board diversity, and firm value. *Financial Review, 38*(1), 33–53.

Chakrabarty, S., & Bass, A. E. (2014). Corporate governance in microfinance institutions: Board composition and the ability to face institutional voids. *Corporate Governance: An International Review, 22*(5), 367–386.

Christiansen, L., Lin, H., Pereira, J., Topalova, P., & Turk, R. (2016). *Gender diversity in senior positions and firm performance, evidence from Europe* (IMF Working Paper No 16/50). International Monetary Fund.

Dadanlar, H. H., & Abebe, M. A. (2020). Female CEO leadership and the likelihood of corporate diversity misconduct: Evidence from S&P 500 firms. *Journal of Business Research, 118*, 398–405.

De Cabo, R. M., Terjesen, S., Escot, L., & Gimeno, R. (2019). Do 'soft law board gender quotas work? Evidence from a natural experiment. *European Management Journal, 37*(5), 611–624.

Desvaux, G., Devillard, S., Labaye, E., Sancier-Sultan, S., Kossoff, C., de Zelicourt, A., & Barton, D. (2017). *Women matter, time to accelerate: Ten years of insights into gender diversity*. McKinsey.

Dobbin, F., & Jung, J. (2011). Corporate board gender diversity and stock performance: The competence gap or institutional investor bias? *North Carolina Law Review, 89*(3), 809–839.

Doldor, E., Vinnicombe, S., Gaughan, M., & Sealy, R. (2012). Gender diversity on boards: The appointment process and the role of executive search firms. *Equality and Human Rights Commission Research Report, 85*, 1–98.

Ellwood, S., & Garcia-Lacalle, J. (2015). The influence of presence and position of women on the boards of directors: The case of NHS foundation trusts. *Journal of Business Ethics, 130*(1), 69–84.

Fama, E. F. (1985). What's different about banks? *Journal of Monetary Economics, 15*(1), 29–39.

Gallego-Álvarez, I., García-Sánchez, I. M., & Rodríguez-Dominguez, L. (2010). The influence of gender diversity on corporate performance: La influencia de la diversidad de género en el rendimiento empresarial. *Revista de Contabilidad-Spanish Accounting Review, 13*(1), 53–88.

García-Meca, E., García-Sánchez, I. M., & Martínez-Ferrero, J. (2015). Board diversity and its effects on bank performance: An international analysis. *Journal of Banking & Finance, 53*, 202–214.

Gul, F. A., Srinidhi, B., & Ng, A. C. (2011). Does board gender diversity improve the informativeness of stock prices? *Journal of Accounting and Economics, 51*(3), 314–338.

He, J., & Huang, Z. (2011). Board informal hierarchy and firm financial performance: Exploring a tacit structure guiding boardroom interactions. *Academy of Management Journal, 54*(6), 1119–1139.

Hedija, V., & Němec, D. (2021). Gender diversity in leadership and firm performance: Evidence from the Czech Republic. *Journal of Business Economics and Management, 22*(1), 156–180.

Hillman, A. J., Withers, M. C., & Collins, B. J. (2009). Resource dependence theory: A review. *Journal of Management, 35*(6), 1404–1427.

Ibhagui, O. W., & Olokoyo, F. O. (2018). Leverage and firm performance: New evidence on the role of firm size. *The North American Journal of Economics and Finance, 45*, 57–82.

Jalbert, T., Jalbert, M., & Furumo, K. (2013). The relationship between CEO gender, financial performance, and financial management. *Journal of Business and Economics Research, 11*(1), 25–33.

Khan, W. A., & Vieito, J. P. (2013). CEO gender and firm performance. *Journal of Economics and Business, 67*, 55–66.

Lückerath-Rovers, M. (2013). Women on boards and firm performance. *Journal of Management & Governance, 17*(2), 491–509.

Luo, J. H., Xiang, Y., & Huang, Z. (2017). Female directors and real activities manipulation: Evidence from China. *China Journal of Accounting Research, 10*(2), 141–166.

Miller, T., & del Carmen Triana, M. (2009). Demographic diversity in the boardroom: Mediators of the board diversity–firm performance relationship. *Journal of Management Studies, 46*(5), 755–786.

Nnabuife, E. K., Onwuka, E. M., & Ojukwu, H. S. (2015). Knowledge management and organizational performance in selected commercial banks in Awka, Anambra State, Nigeria. *IOSR Journal of Business and Management, 17*(8), 25–32.

Offermann, L. R. & Foley, K. (2020). Is there a female leadership advantage? In *Oxford research encyclopedia of business and management*.

Ogundele, O. S., Akinadewo, I. S., & Olowookere, J. K. (2020). Determinants of Bank Credit Risk: Evidence from Deposit Money Banks in Nigeria. *Islamic University Multidisciplinary Journal, 7*(3), 85–93.

Ogundele, O. S., Fanimokun, I. O., & Mordi, K. I. (2022). Board characteristics and capital structure of the Nigerian banking sector. *International Journal of Innovative Research in Accounting and Sustainability*, *7*(4).

Palvia, A., Vähämaa, E., & Vähämaa, S. (2015). Are female CEOs and chairwomen more conservative and risk-averse? Evidence from the banking industry during the financial crisis. *Journal of Business Ethics, 131*, 577–594.

Pfeffer, J. (1972). Size and composition of corporate boards of directors: The organization and its environment. *Administrative Science Quarterly, 17*(2), 218–228.

Reguera-Alvarado, N., de Fuentes, P., & Laffarga, J. (2017). Does board gender diversity influence financial performance? Evidence from Spain. *Journal of Business Ethics, 141*(2), 337–350.

Satriyo, H., & Harymawan, I. (2018). The role of female CEOs on firm performance: Some evidence from Indonesian listed firms. In *Proceedings of the Journal of Contemporary Accounting and Economics Symposium 2018 on Special Session for Indonesian Study (JCAE 2018)-Contemporary Accounting Studies in Indonesia* (pp. 309–315).

Schopohl, L., Urquhart, A., & Zhang, H. (2021). Female CFOs, leverage and the moderating role of board diversity and CEO power. *Journal of Corporate Finance, 71*, 101858.

Smith, E. B., Chown, J., & Gaughan, K. (2021). Better in the shadows? Public attention, media coverage, and market reactions to female CEO announcements. *Sociological Science, 8*, 119–149.

Smith, N., Smith, V., & Verner, M. (2006). Do women in top management affect firm performance? A panel study of 2,500 Danish firms. *International Journal of Productivity and Performance Management, 55*(7), 569–593.

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Basil Blackwell.