BOARD GENDER DIVERSITY AND FINANCIAL PRFORMANCE OF LISTED DEPOSIT MONEY BANKS

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Abstract

In developing countries such as Nigeria, the role of women is minimized at the economic and social strata; thus limiting their contribution in the society. The main aim of this study is therefore to examine the effect of board gender diversity on financial performance of listed deposit money banks in Nigeria. The study sampled 12 listed deposit money banks and obtained data spanning from 2012 to 2022. The result of the regression analysis document that the proportion of female directors to total directors on the board has no significant negative effect on financial performance of listed deposit money banks in Nigeria while the presence of critical mass of female directors (at least three female directors) has a positive and significant effect on financial performance of listed deposit money banks in Nigeria. The study recommends for the inclusion and participation of more women on the corporate board of banks in order to ensure that their impact are more felt on their financial performance.

Keywords: board gender diversity, financial performance, deposit money banks.

1.0 Introduction

1.1 Background to the study

The intermediation role played by the banking sector positions it as the foremost channel of economic growth. According to Kajola et al (2019), banking sector is regarded as the instrument for engineering sustainable economic growth through the vital fund intermediation role performed by the sector. Thus, the sector must remain stable in order to efficiently and effectively perform this fundamental role towards the growth of the economy. Profitability is one of the paramount measures of sustainability. Banks must make profit in order to be able to continue in their operation as going concerns and withstand shocks and competition in their operating environment. Profitability has been defined by Sanyaolu et al (2019) as the fruitful outcome of prudent allocation of banks' resources to their core operation. It is only profitable banks that can pay dividend, pay tax to government and expand their operations through profit retention.

As important as profitability is to the success of any business outfit, it cannot be attained in isolation of effective and efficient corporate governance mechanism. Among the very many concepts in corporate governance, board gender diversity stands unique particularly in this era, following the global concern for inclusion of female on boards of corporations as a means of achieving 2030 sustainable development goals (Sanyaolu et al, 2021). According to Saeed & Sameer (2017), the inclusion of directors with diverse and distinct attributes, background, and experience can positively influence overall board decision effectiveness. The presence of women on board is argued to be associated with high diversity and performance (Magoma & Ernest, 2023). The under-representation of women on the board of firms despite the fact that they outnumber men in terms of population, and the fact that there are many women with more academic qualifications and attainment has made board gender diversity a topic of intense debate among practitioners, academics and regulators (Conyon & He, 2017; Chijoke- Mgbame, 2020). This in turn has inspired many countries to pass legislation increasing women representation and participation at economic and corporate levels.

Board gender diversity has been argued to improve the controlling and monitoring of directors (Liao et al., 2016). This controlling and monitoring role can help mitigate the agency problem and align the interest of the managers with that of shareholders thereby improving firm performance. The presence of women on the board has also been argued by Abd rahman, Jamil and Ismail (2019) to affect board decision making differently and that their low representation on boards of corporation will also have effect on their influence in decision-making process.

Drawing on the role of the board gender diversity in improving the quality of board decision making, this study analyzed the role of board gender diversity on profitability of listed deposit money banks in Nigeria. There is no doubt as to the fact that some studies have been conducted on board gender diversity and firm outcomes (Sanyaolu et al, 2022; Kajola et al, 2019),, The common limitation of most of the vast majority of these studies is that they measured board gender diversity by the proportion of female directors to total board size. This because the approach assumes that all female directors have similar backgrounds, experiences and perspectives which may not be the case. Different women may bring different perspectives to the board and a more nuanced measure of diversity would consider these factors. Critical mass involves assessing the minimum threshold or percentage of women required to achieve meaningful representation and influence in the board decision making. While there are no universally agreed-upon measure for critical mass, this study adopted 'Three or More Rule' basis which suggest that having three or more female directors on the board is necessary to overcome the potential marginalization of women voices and achieve critical mass. According to Kramer et al. (2006), having three or more women on the board acts as a particular threshold and better impacts the board. They posit that more women bring more positive value to the board than when the board has fewer women. The concept of Critical Mass Theory (CMT) proposes that the presence of more female directors on boards influences corporate performance (Javaid et al, 2023)**.** Thus, the study fills the gap in existing studies on board gender diversity and profitability by considering the critical mass of female directors' approach as a measure of board gender diversity. The CMT regards single female as a 'token' and does not influence firm decisions (Kanter 1977). Our study toes the line of Granovetter (1978) and Liu et al. (2014), who argue that a critical mass is required to provide evidence that gender diversity influences corporate practices. Our study contributes to literature by measuring board gender diversity by critical mass of directors differently from most studies conducted in Nigerian banking sector which measure gender diversity by proportion of female directors to total board size (Sanyaolu et al, 2023; Oyedokun, 2019). Thus the study contributes to literature.

The study found that the proportion of women directors on the board has no significant negative effect on profitability of listed deposit money banks in Nigeria. This implies that there is low women representation on the board and that most of the female directors on the board do not have the power to influence board decision. On the other hand, the study found that the presence of critical mass of directors has a positive but no significant effect on profitability of listed deposit money banks in Nigeria. The implication of the finding is that when more women are introduced to the board, they tend to have more influence and power on board decision which increases firm performance.

The remaining parts of the work are organized as follows. The review of the literature is done in section two. Section three discusses the methodology adopted in the study. Section four presents the result of the study and discusses the findings. Section five concludes the work and makes recommendations for future studies.

1.2 Statement of the problem

The lack of gender diversity on corporate boards has been a persistent issue in many organizations, including listed deposit money banks in Nigeria. While there is growing recognition of the importance of gender diversity in corporate governance, there is limited research on how board gender diversity specifically affects the financial performance of these banks. This study aims to address this gap by examining the relationship between board gender diversity and financial performance in the Nigerian banking sector.

The problem statement revolves around the need to understand whether increasing gender diversity on the board of listed deposit money banks in Nigeria has a positive or negative impact on their financial performance. By investigating this relationship, the study aims to provide insights into the potential benefits or drawbacks of promoting gender diversity on corporate boards and its implications for the financial outcomes of these banks.

The problem statement also acknowledges the current underrepresentation of women on corporate boards in Nigeria and the potential consequences of this imbalance. It highlights the need to explore strategies and policies that can foster greater gender diversity and enhance the overall effectiveness and performance of listed deposit money banks in the country.

In summary, the study seeks to address the gap in knowledge regarding the relationship between board gender diversity and financial performance in the context of Nigerian deposit money banks, contributing to the existing literature on corporate governance, gender diversity, and organizational performance.

1.3 Objectives of the study

The main objective of the study is to examine the extent to which board gender diversity influences financial performance of listed deposit money banks in Nigeria. The study measures financial performance by Return on Asset (ROA). However, the specific objectives are:

i. To examine the effect that the proportion of female directors to total board size has on the financial performance of listed deposit money banks in Nigeria

ii. To investigate the effect of at least three female directors referred to as the critical mass has on the financial performance of listed deposit money banks in Nigeria

1.4 Research Questions to examine

i. What is the effect of the presence of female directors on the financial performance of listed deposit money banks

ii. What is the effect of at least three female members on the board of directors, on the financial performance of listed deposit money banks in Nigeria

1.5 The study therefore hypothesizes that:

H_{01}: Proportion of female directors to total board size has no significant positive effect on profitability of listed deposit money banks in Nigeria.

H_{02} The presence of critical mass of directors has no significant effect on profitability of listed deposit money banks in Nigeria.

1.6 Significance of the study

The significance of the study on "Board gender diversity and financial performance of listed deposit money banks in Nigeria" lies in its potential to contribute to the understanding of the relationship between gender diversity in corporate boards and financial performance in the Nigerian banking sector. Here are some key significance of the study:

Closing the gender gap: Nigeria, like many other countries, has been striving to achieve gender equality and empower women in various sectors, including corporate leadership. Examining the impact of board gender diversity on financial performance can shed light on the progress made towards closing the gender inequality gap in the banking industry.

Enhancing corporate governance: Board gender diversity is often seen as a key aspect of good corporate governance. By studying its impact on financial performance, the study can provide insights into how diversity in corporate boards can improve decision-making processes, accountability, and transparency in the Nigerian banking sector.

Informing policy and practice: The findings of the study can inform policymakers, regulators, and industry practitioners in developing and implementing policies and practices that promote gender diversity in corporate boards. It can provide evidence-based recommendations on the benefits of gender diversity and the strategies to enhance representation of women in leadership roles.

Improving financial performance: Understanding the relationship between board gender diversity and financial performance can help banks and other financial institutions in Nigeria make informed decisions regarding board composition. It can guide them in attracting and retaining diverse talent, fostering an inclusive corporate culture, and ultimately improving their financial performance and competitiveness.

Contribution to the literature: The study can contribute to the existing body of literature on gender diversity and financial performance, particularly in the context of the Nigerian banking sector. It can provide valuable insights and empirical evidence that can be compared and contrasted with similar studies conducted in other countries.

2. 0 Literature review

2.1 Conceptual Review

2.1.1 Gender diversity

Gender diversity refers to the presence and representation of both males and females in various contexts, such as organizations, institutions, and decision-making bodies. It highlights the importance of having equal opportunities and inclusivity for individuals of all genders, and aims to promote a more balanced and equitable distribution of power, influence, and perspectives. Board gender diversity is the composition of male and female directors on corporate boards, taking into account their qualifications, skills, and expertise. It recognizes the value of a diverse set of competencies in boardroom deliberations and strategic decision-making." (Adams & Ferreira, 2009)

Gender diversity is often discussed in the context of corporate governance, where it refers to the inclusion of women on corporate boards and in senior leadership positions. It recognizes the need for diverse perspectives, experiences, and skills in decision-making processes, and the potential benefits that gender diversity can bring to organizational performance and outcomes. Board gender diversity refers to the variety of perspectives and experiences brought by having a mix of male and female directors on corporate boards. It recognizes the potential benefits of diverse viewpoints in decision-making and governance processes." (Carter et al., 2003)

Studies have shown that gender diversity in corporate boards can lead to enhanced decision-making, improved financial performance, increased innovation and creativity, and better risk management. It is believed that boards with both male and female members are more likely to consider a wider range of viewpoints, challenge groupthink, and make more informed and balanced decisions.

Promoting gender diversity is not only a matter of fairness and social justice but also a strategic imperative for organizations. It contributes to creating a more inclusive and supportive work environment, attracting and retaining top talent, improving corporate reputation, and ultimately driving sustainable business success.

Efforts to promote gender diversity often involve implementing policies and practices that ensure equal opportunities for both men and women in recruitment, promotion, and leadership development. It also involves challenging and dismantling gender biases and stereotypes that may hinder the advancement of women in traditionally male-dominated fields.

In summary, gender diversity is a critical aspect of fostering inclusive and effective governance practices, and it has the potential to create positive societal and economic impacts.

2.1.2 Return on Assets

ROA, on the other hand, is the ratio of net income to the book value of the assets of the organization. ROA is a widespread measure used in studies on board of directors (Terjesen et al. 2016). Operating efficiency is reflected in ROA (Moreno-Gómez & Calleja-Blanco 2018). The ROA measures a company's profitability as a percentage of its total assets. It provides insight into how well management uses its resources to produce profits (Amartey et al. 2019). ROE is also referred to as return on investment (ROI) (Marashdeh 2014)

2.1.3 Board gender diversity and financial performance

Female directors are argued to bring to the board better understanding of business environment due to their better understanding of the markets better than their male counterparts (Ntim, 2015). Women have also been argued to promote firm corporate image through their disposition to charitable and philanthropic activities. The distinctive qualities of female such as ethical attitudes is argued by researchers such as Grant (1988) to positively influence firm economic outcomes. On the other hand, some researchers such as (Burgess & Tharenou, 2002; Catalyst, 1998; Francoeur, Labelle, & Sinclair-Desgagne, 2007) have contested this argument by maintaining that female representation negatively impact firm performance. This study however expects board gender diversity to positively affect firm outcomes as Nigeria is characterized by weak legal institutions and poor governance environment, to benefit from a gender-diverse board. This is so as gender diversity may serve as a panacea to weak institutional and governance systems (Chijoke –Mgbame et al, 2020).

2. 2. Theoretical review

2.2.1 Agency Theory

The discussion on board gender diversity and financial performance has hovered around some pertinent theories prominent among which is agency theory which underpins this study. The agency theory was developed by Jensen and Mecking in 1976 and emphasizes that their agency relationship crisis between the principals (shareholders) and the agents (management) and can breed agency crisis which arises when the managers tends to act in their own best interest as against that of the principals. Agency theory focuses on the relationship between principals (shareholders) and agents (board members) and how conflicts of interest arise in this relationship.

In the context of the study, the board of directors acts as the agent of shareholders and is responsible for making decisions that align with the best interests of the company and its shareholders. Gender diversity on the board introduces a new dimension to the agency relationship, as it can potentially impact decision-making processes, board dynamics, and ultimately, financial performance.

According to agency theory, gender diversity on the board can be seen as a mechanism to reduce agency costs. It is argued that diverse boards bring different perspectives, experiences, and expertise to decision-making processes, leading to better governance and improved financial performance. This is based on the premise that gender-diverse boards are more likely to engage in critical discussions, consider a wider range of viewpoints, and make more informed decisions, which can positively influence the company's financial performance.

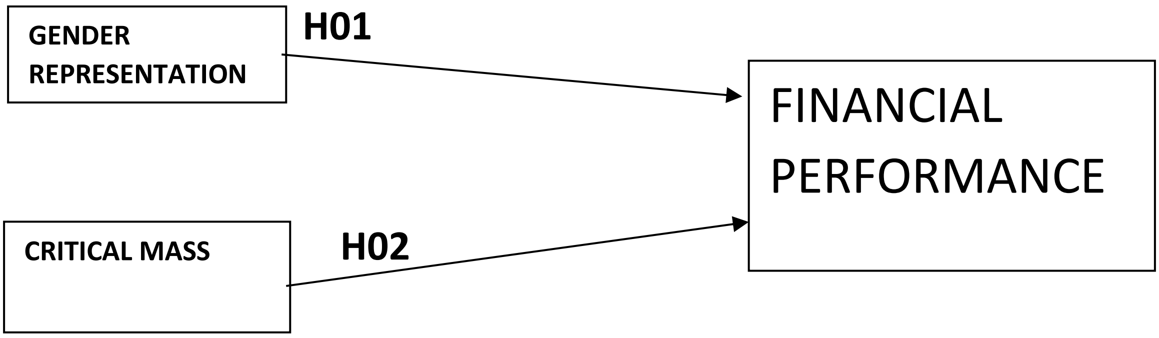
However, agency theory also recognizes the potential for conflicts of interest and agency problems that can arise in the boardroom. It suggests that gender diversity alone may not automatically lead to improved financial performance. Factors such as board independence, board size, and the skills and qualifications of individual directors also play a significant role.

By using agency theory as the underlying framework for the study, researchers can examine the relationship between board gender diversity and financial performance through the lens of agency conflicts and the alignment of interests between shareholders and board members. This allows for a more comprehensive understanding of how gender diversity on the board influences decision-making processes and ultimately impact the financial performance of listed deposit money banks in Nigeria.

2. 3. Empirical review

Aladejebi (2021) examined the effect of board gender diversity of 13 listed deposit money banks in Nigeria by obtaining data spanning from 2015 to 2019. Regression analysis was utilized in analyzing the data for the study. The result of the regression analysis posits that there is no significant effect of board gender diversity on performance. Manyaga, et al (2020) analysed the effect of board gender diversity on financial performance of commercial banks in Kenya by sampling 34 commercial banks in Nigeria from 2008 to 2017. The result of the fixed effect regression analysis posits that board gender diversity has a significant negative effect on return on equity. Magoma and Ernest (2023) analysed the effect of gender diversity on financial performance of 15 listed firms in Tanzania by obtaining data spanning from 2016 to 2021. The result of the study could not find significant effect of board gender diversity on financial performance measured by return on asset and return on equity. Bukar et al, (2020) investigated the effect of board gender diversity on financial performance of deposit money banks in Nigeria obtaining data of 16 banks ranging from 2011 to 2015. The result of the regression analysis posits that gender diversity has a significant positive effect on return on asset while it has no significant effect on return on equity. Afolabi et al (2022) analysed the effect of board gender diversity on financial performance of five listed deposit money banks in Nigeria. The result of the regression analysis posit that board gender diversity has a significant and positive effect on financial performance. Khalaf (2022) examined the effect of board gender diversity on banks performance in Jordan involving a sample of 13 listed banks by obtaining data spanning from 2005 to 2020. The result of the regression analysis documents that board gender diversity has a significant positive effect on profitability of listed banks in Jordan. Galletta et al (2021) analysed the effect of gender diversity on banks sustainability performance involving banks from 48 countries and obtaining data set spanning from 2011 to 2019. The result of the OLS and probit regressions maintain that increase in the proportion of female directors increased banks financial and sustainability performance. Othmani (2020) analysed the role of board gender diversity on performance of banks in Tunisia by obtaining data spanning from 2015 to 2018. The result of the analysis documents that board gender diversity has a significant effect on profitability.

Figure 2.1: Conceptual Framework



Source: Author's Design, 2023

3. Data and Methodology

3.1. Sample Design

The sample of the study comprises of 12 listed deposit money banks in the Nigerian Stock Exchange. Out of the 13 listed banks, only these twelve banks provide pertinent data for the referenced periods. The data for the study spanned from 2012 to 2021. The sample of the study represents almost 92% of the population using purposive sampling technique.

3.2 Data Collection

The data for the study were obtained from the annual reports and accounts of the sampled banks.

Table 3.1: Name of selected listed deposit money banks

S/N	BANK
1	Access Bank
2	ECO Bank
3	Fidelity Bank

4	First Bank of Nigeria
5	First City Monument Bank
6	Guaranty Trust Bank
7	Sterling Bank.
8	Union Bank
9	United Bank for Africa
10	Unity Bank
11	Wema Bank
12	Zenith Bank,

Source: Authors compilation, 2023

3.3 Model Specification

ROA it = β0+ β1GD+β2REP it + β2 BS it +β3 it + β4BI it + β5+ β6sSIZE t + β9AGE it +e it

Where:

ROA= return on asset of bank i in period t

GD= proportion of female directors to total board size of bank i in period t

REP=Presence of at least three directors on the board for bank i in period t.

SIZE= Natural logarithm of total asset of bank i in period t

BS it = Board size of bank in period t

AGE= listening age of bank i in period t

e it = stochastic error term

3.4. Data Estimation Techniques

Descriptive and inferential statistics were utilized in analyzing the data for the study. The descriptive statistics is made up of the descriptive analysis, correlation and multicollineratiy test. On the other hand, the inferential statistics involves the fixed and random effects. The study also conducted Hausman and Hausman test to choose the most appropriate technique between the fixed and random effects.

3.5. Variable Description

Return on asset: this is one of the variables used in capturing profitability in this study. It is one of the most popular measures of profitability in finance literature as it measures the efficiency of the management in utilizing assets at their reach to generate returns. Researchers such as Kajola et al, 2021; Sanyaolu et al, 2022; have used it as a measure of profitability in their studies.

Return on equity: this measures the extent to which the appointed managers are able to utilize the shareholders wealth in generating positive returns. It is also an important measure of profitability particularly to shareholders as it measures how best banks managers are able to use equity to generate earnings.

Board gender diversity: This refers to the presence of female directors on the board and measured by the proportion that the number of female members bears to the total board members. The independent variables of the study is board gender diversity while variables such as board size, board meeting, loan to deposit ratio, capital adequacy ratio, bank size, growth rate in gross domestic product and annual interest rate are the control variables of the study. The moderating variable of the study is economic recession.

Table 3.2: Description of variables

Variable	**Abbreviation**	**Measurement**	**Source**
Profitability	ROA	Profit before tax/total asset	Sanyaolu et al, 2022;
Gender diversity	GD	Proportion of female directors to total board size	Kajola et al, 2019; Soyemi, 2019; Sanyaolu et al, 2022
Gender Representation	REP	A dummy variable= 1 if there are at least three directors on the board and 0 otherwise	Narvid et al, 2023.
Board Size	BS	Total number of directors on the board	Nadeem et al (2017); Kajola et al, 2019.
Board independence	BI	Non-executive directors to total board size	Nadeem et al (2017); Kajola et al, 2019.
AGE	AGE	Total number of years since incorporation to date	Sanyaolu, 2022; Kajola et al 2018, Kajola et al, 2021.

SIZE	SIZE	Natural logarithm of total asset	Sanyaolu et al, 2019; Soyemi et al, 2019

Source: Authors compilation, 2023

4.0 DATA PRESENTATION AND ANALYSIS

Table 4.1: Descriptive Statistics

	ROA	GD	REP	BM	BS	LDR	LASSET	AGE
Mean	0.019366	0.238358	0.704545	6.371212	13.20455	0.636361	21.29651	51.81061
Median	0.014323	0.250000	1.000000	6.000000	14.00000	0.624078	21.29945	34.00000
Maximum	0.176337	0.454545	1.000000	16.00000	20.00000	1.250588	23.24845	130.0000
Minimum	-0.156292	0.000000	0.000000	1.000000	6.000000	0.035504	18.86861	5.000000
Std. Dev.	0.031138	0.106871	0.457985	2.481705	3.023417	0.197709	0.926884	33.61528
Skewness	0.049933	-0.629857	-0.896644	1.104823	-0.006916	-0.117341	-0.173247	0.886126
Kurtosis	19.17617	2.997323	1.803970	4.633824	2.391413	3.679614	2.502067	2.695856
Jarque-Bera	1439.232	8.727865	25.55502	41.53554	2.038130	2.843229	2.023980	17.78361
Probability	0.000000	0.012728	0.000003	0.000000	0.360932	0.241324	0.363495	0.000138
Sum	2.556309	31.46321	93.00000	841.0000	1743.000	83.99970	2811.140	6839.000
Sum Sq. Dev.	0.127016	1.496207	27.47727	806.8106	1197.477	5.120648	112.5439	148028.3
Observations	120	120	120	120	120	120	120	132

Source: Authors compilation, 2023

The table above shows the result of the descriptive analysis for the effect of board gender diversity on profitability of listed deposit money banks in Nigeria. ROA is averaged 0.02 and ranges from -15.6% to 17.6%. Proportion of female directors to total directors is averaged 23.8% and ranges from 0.000 to 45.5%. The presence of at least three directors on the board is averaged 70.5% and ranges from 0 to 1. Board meeting is averaged 5.37 and ranges from 1 to 16. Board size is average 13.2% and ranges from 6 to 20. Loan to deposit ratio is averaged 63.6 % and ranges from 3.5% to 125%. The natural logarithm of banks size is averaged 21.3 and ranges from 18.9 to 23.2. Age has a mean of 51.8 and ranges from 5 to 130. With respect to the normal distribution of the variables, ROA, GD, REP and board independence appear fairly distributed given their standard deviation values that are below 1 while variables such as natural logarithm of total asset and age are highly dispersed. With respect to the kurtosis, all the variables are platykurtic except ROA given their kurtosis values that are less than 3.

These represent normal distribution. RAO, BI and AGE are positively skewed while all others are negatively skewed.

Table 4.2: Correlation Analysis

	ROA	GD	REP	BM	BS	LDR	LASSET	AGE
ROA	1.000000	-0.010544	-0.022354	-0.173767	0.052040	0.223403	0.223085	-0.150092
GD	-0.010544	1.000000	0.708352	-0.094787	-0.128929	-0.032592	-0.037740	-0.017618
REP	-0.022354	0.708352	1.000000	0.050219	0.319622	0.060270	0.080188	0.177319
BM	-0.173767	-0.094787	0.050219	1.000000	0.253303	0.023423	0.164107	0.237113
BS	0.052040	-0.128929	0.319622	0.253303	1.000000	0.051225	0.354743	0.304051
LDR	0.223403	-0.032592	0.060270	0.023423	0.051225	1.000000	-0.010454	-0.336876
LASSET	0.223085	-0.037740	0.080188	0.164107	0.354743	-0.010454	1.000000	0.228767
AGE	-0.150092	-0.017618	0.177319	0.237113	0.304051	-0.336876	0.228767	1.000000

Source: Authors compilation, 2023

The result in table 4.2 above implies that there is no multicollinearity in the correlation coefficient as none is close to 0.82 (Gujarati, 2003).

Table 4.3 Regression result

	Fixed Effect			Random Effect		
Regressors	Coeff	t-stat	p-val	Coeff	t-stat	p-val
C	-0.978936	-4.906293	0.0000	-0.152042	-2.488026	0.0143
ROA(-1)	0.231241	2.680995	0.0086	0.270243	3.356676	0.0011
GD	-0.069746	-1.303961	0.1952	0.006860	0.175071	0.8613
REP	0.021379	1.692941	0.0936	-0.001434	-0.143556	0.8861
BM	-0.003560	-2.140157	0.0348	-0.002460	-2.330680	0.0216
BS	-0.001206	-0.724514	0.4704	0.000140	0.127644	0.8987
LDR	0.047433	3.012077	0.0033	0.041446	3.013966	0.0032
AGE	-0.009854	-4.631599	0.0000	-1.01E-05	-0.114383	0.9091
LASSET	0.071084	5.097991	0.0000	0.007163	2.409702	0.0176
R-square		0.415194			0.221685	
Adj.R-square		0.304081			0.165591	

F-stat		3.736680			3.951983	
Prob F-stat		0.000008			0.000380	
Durbin Watson		1.689560			1.821166	
Hasman test	32.896054	8	0.0001			

Source: Authors compilation, 2023

The regression tables above shows the effect of board gender diversity on profitability of listed deposit money banks in Nigeria. The result of the Hausman test, which is significant at 5%, indicates that fixed effect is the appropriate estimation technique. The adjusted R-square of 0.304081 indicates that almost 30% variation in return on asset is accounted for by board gender diversity and the control variables of the study. The probability of the F-statistics which is significant at 1% indicates that the mode is fit. The p-value of F-statistics of 0.000 shows that the model is fit. The Durbin-Watson statistics of 1.69 shows absence of autocorrelation. A period lag of profitability is found to have a significant positive effect on profitability of listed deposit money banks.

The result of the regression analysis above indicates that the proportion of female directors to total directors on the board has no significant negative effect on profitability of listed deposit money banks in Nigeria. The coefficient of -0.069746 indicates that a percentage increase in the proportion of female to male directors on the board will reduce profitability by almost 7%. The implication of the finding as to the negative effect is that the proportion of female directors on the board may not be sufficient to make the female directors have the power to influence board decision effectively and efficiently. The result of this finding contradicts to the finding of Galletta et al, 2021; Othmani, 2020 that found positive significant effect of board gender diversity on financial performance. Thus, the study fails the reject the null hypothesis that the proportion of female directors to total directors on the board has no significant positive effect on profitability of listed deposit money banks in Nigeria. With respect to the presence of at least three female directors on the board as a surrogate for board gender diversity, the study finds its positive and significant effect on profitability of listed deposit money banks. The positive and significant effect implies that the presence of more female directors on the board enable them to have more power to contribute positively to critical decision, particularly those relating to profitability. The result of the finding attunes to that of Afolabi et al, 2022 that found significant positive effect of board gender diversity on profitability of listed deposit money banks in Nigeria. On the other hand, the study contradicts finding by Bukar et al, 2020 that reported positive but no significant effect of board gender diversity on profitability of listed deposit money banks in Nigeria. Thus, the study rejects the null hypothesis that the proportion of female directors to total directors on the board has no significant positive effect on profitability of listed deposit money banks in Nigeria.

With respect to the control variables of the study, board meeting is found to have a negative but significant effect on profitability of listed deposit money banks. This implies that the quality of discussion is far more important than meetings to fulfil statutory requirement otherwise such time should be saved to grow the business (Sanyaolu et al, 2020). The study found that board size has no significant negative effect on profitability of listed deposit money banks in Nigeria. The finding implies that larger boards are associated with low profitability but this does not significantly influence it. The implication of the finding is that larger board may slow decision making process and reduce the efficiency of the board in making timely decision as consensus have to be reached by all the directors. Also, increase in board size will increase directors' remuneration which is a charge against profit.

Loan to deposit ratio was found to have a positive and significant effect on profitability of listed deposit money banks in Nigeria. This implies that as banks grants more loans to customers from the deposit they pool from depositors, profitability will increase. This could be adduced to the fact that loan and advances are the main income generating assets of banks and an increase in it will increase profitability (Kajola et al, 2019). The study found however that bank age has a significant negative effect on profitability of listed deposit money banks. The implication of the finding is that older banks are less efficient in utilsing their resources to generate positive earnings. Bank size was found to have a significant positive effect on profitability of listed deposit money banks in Nigeria. The implication of the finding is that larger banks are able to significantly improve profitability due to the fact that they are exposed to economies of scale which reduces average cost of operation.

5. Conclusion and recommendations

This study investigates the effect of board gender diversity on profitability of listed deposit money banks in Nigeria. 12 listed deposit money banks were sampled out of the 13 listed deposit money banks in Nigeria and data for the study spanned from 2012 to 2022. The study found negative and no significant effect of proportion of female directors to total board size while it found positive and significant effect of at least the presence of three directors on the board to total board size on profitability of listed deposit money banks in Nigeria. The study implies that board gender diversity plays significant roles on banks profitability in Nigeria most especially when there are more female directors on the board. This study contributes to literature on board gender diversity and profitability by considering the critical mass of directors which has not formed the basis of most empirical studies reviewed. The study, arising from the finding recommends for more female inclusion and participation in critical board decision so as to improve their contributions to banks profitability.

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