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BOARD DIVERSITY AND FINANCIAL LEVERAGE OF LISTED COMMERCIAL BANKS IN NIGERIA (2012 - 2022)

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ABSTRACT:

This study ascertained the effect of board diversity on financial leverage of listed deposit money banks in Nigeria for the period of eleven (11) years spanning from 2012 to 2022. Board size, and board independence were used to proxy board diversity while debt-to-equity ratio was used to measure financial leverage. In line with the objectives of the study, two hypotheses were formulated. Ex-Post facto research design was employed. Thirteen (13) listed deposit banks constituted the sample size of this study. Secondary data were extracted from the annual reports and accounts of the sampled firms and were analysed using E-Views 10.0 statistical software. The study employed both descriptive and inferential statistical. The inferential statistics was applied using Pearson correlation and Panel Least Square (PLS) regression analysis. Findings from the empirical analysis showed that Board Size has a significant and positive effect on debt to equity ratio (β1 = 0.105965; P-value = 0.0030); Board Independence has a significant and positive effect on debt to equity ratio (β1 = 0.015668; P-value = 0.0000). Conclusively, board diversity has a significant and positive effect on financial leverage of listed deposit money banks in Nigeria at 5% level of significance. The study recommended that since gender-diverse boards influences the financial leverage of firms through better monitoring which is likely to increase confidence and encourage ownership by uninformed investors, hence, there is need for more female directors on the Board

1. INTRODUCTION

The board is the most influential decision-making unit of an organization, with responsibilities ranging from making key financial and strategic decisions to choosing the company's top executive leadership. Given the level of expertise and the amount of information needed to understand and govern today's complex businesses, it is unrealistic to expect an individual

director to be knowledgeable and informed about all phases of business. This is where the concept of board diversity comes into play. Corporations are increasingly under pressure to ensure diversity within their boardrooms. Some scholars have described board diversity as a demographic phenomenon entailing age, gender, and ethnicity (Magoma & Ernest, 2023). The board of directors performs a very important role in corporate governance because of its vital duty to monitor top management and to ensure the reliability of financial reporting. Good corporate governance practices can help management better monitor and control the use of firm resources (Mulenga & Haabazoka, 2024). Such efficient practices can motivate management to reveal all the material and relevant information to investors. In that case, investors will have a positive view of firm performance and, with the anticipation of more dividends, will expect higher potential cash flows.

Debt and equity being the generic terms used for the sources of capital have grown in its own terms and meanings where debentures, bonds, loans, running finances, ordinary shares, preferred shares and retained earnings are the additional divisions made for these sources (Nworie, Onyeka & Anaike, 2023). Finance managers are expected to choose the best option for a given resources to be funded and strike the right balance that can reduce cost and increase earnings for the shareholders. There are different schools of thoughts that have presented arguments on the optimal level of leverage that a firm should take. The ideal position can be ascertained by analyzing the trade-off amongst the cost of bankruptcy and the tax advantage that firms save through charging of interest expenses (Brusov & Filatova, 2023). The historic work of Modigliani and Miller of 1958, which disregards bankruptcy, cost and tax advantage but focus on the risk of leverage that will eventually make shareholders demand more compensation. Financial leverage is the degree to which a firm has funded its business operations through outside resources (Modigliani & Miller, 1958). Leveraged businesses have additional capital available to finance its operations and expansions compared to an unleveraged business solely dependent on equity (Singh, Singhania & Aggrawal, 2023). The multiple cases of institutional failure across the globe in recent times have brought the attention of stakeholders to the makeup of the board of directors. The consequences of ineffectiveness and inconsistencies in management decision making have severally led to corporate failure which not only affects the shareholders wealth but also, the employees, suppliers, consumers and nations as a whole. The board is the supreme decision-making unit in the company, as the board of directors has the responsibility to safeguard and maximize shareholder's wealth, oversee firm performance, and assess managerial efficiency. A diverse board encompasses many elements.

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Every board must work to become a smoothly functioning team. More diverse boards may have to work a little harder. While we all claim to value diversity of opinions, people often feel baffled, threatened and even annoyed by persons with backgrounds that are different from their own. Board orientation becomes more important when the new board member is of a different gender, age or background relative to the rest of the board. One of the biggest disadvantages of board diversity occurs when diversity is stressed at the expense of all other traits (Zattoni, Leventis, Van Ees & De Masi, 2023). Many boards reflect only one segment of the overall population, regardless of the companies' constituency or customer base. Some corporate governance experts believe that what is needed is more diversity (in gender, ethnicity, age and so on) which may then provide a broader base of opinions and input. The banking sector faces several significant challenges which include a shortage of lending; currency volatility; fears over the sustainability of supply chains; downward pressure on prices; globalization and expansion into new markets; low-cost country sourcing; pursuit of growth through innovation; product proliferation; service competition; going green; the war for talent; mergers, acquisitions, and divestitures; enterprise risk management, and compliance requirements (Wingard, 2024). Addressing each of these areas present an enormous challenge to commercial banks. Beating the competition and driving profitable growth to exceed investor expectations in this context is a daunting task.

Numerous studies have tried to establish the importance of board diversity to enhanced firm performance, but there has been no consensus on the influence of board diversity on firm performance. Findings from extant literature have been mixed and inconclusive, ranging from significant positive relationship to negative relationship and non-significant relationship thereby creating a gap in knowledge which this study tends to fill. For instance Nguyen and Huynh (2023), El-feky (2023), Aurelian, Dumitrescu, Micu and Lobda (2022), Khan and Wang (2021), Nwezoku and Egbunike (2020) are of the view that diversity provides positive performance benefits to organizations. Some other studies found non-significant influence of board diversity on firms' financial performance (Alshirah, Alfawareh, Farhan, Al-Eitan, Bani-Khalid & Alsqour, 2022; while Adegboyegun and Igbekoyi (2022); Purushottam (2020); Muhammad, Liu and Huang (2019) found a negative relationship. In resolving the gap in knowledge, this study considered financial leverage as against prior studies that focused on financial performance thereby, resolving the variable gap (to the best knowledge of the researcher). Again, the fiscal year gap was bridged by considering 2022 as part of the financial period, as against prior studies that the scope of its financial period ended in 2021, hence, the need for this study.

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1.1 Objectives of the Study

The main objective of this study is to ascertain the effect of board diversity on financial leverage of listed commercial banks in Nigeria. The specific objectives were to:

1. ascertain the effect of board size on debt to equity ratio of listed commercial banks in Nigeria
2. assess the effect of board independence on debt to equity ratio of listed commercial banks in Nigeria.

1.2 Hypotheses

Based on the objectives of this study the following null hypotheses were tested:

H_{o1}: Board size has no significant effect on debt to equity ratio of listed commercial banks in Nigeria.

H_{o2}: Board independence has no significant effect on debt to equity ratio of listed

2. LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Board Diversity

Diversity refers to differences between individuals on any personal attributes that determine how people perceive one another (Hoseini & Gerayli, 2018). Diversity is a human characteristic that differentiates one person from another. This includes biological characteristics of race, gender, age, colour, national origin as well as family and society in which they were born into (Gordini & Rancati, 2017). Board diversity can be defined as the variety inherent amongst the members of boards of directors with regard to characteristics such as kinds of expertise, managerial background, personality, learning style, age, gender, education and values (Lanis, Richardson, & Taylor, 2017). It relates to the board composition and the varied combination of attributes, characteristics and expertise contributed by individual board members in relation to board process and decision making (Hoang, Abeysekera, & Ma, 2016). Board diversity aims to cultivate a broad spectrum of demographic attributes and characteristics in the boardroom. It is a simple and common measure to promote heterogeneity in the boardroom (Mirza & Malik, 2019). Diverse boards and directors bring a valuable range of outlooks, opinions and suggestions regarding decision-making and problem-solving. It can serve as an opportunity for expanding viewpoints and collectively coming together in the decision-making process for the company's benefit (Joshi, 2021).

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2.1.2 Board Size

Board size refers to the total number of directors on the board of each sample firm which is inclusive of the chief executive officer (CEO) and Chairman for each accounting year. This will include outside directors, executive directors and non-executive directors (Reguera-Alvarado, de-Fuentes & Laffarga, 2015). Board size represents the total head counts of directors seating on the corporate board. Size of the board is recognized as one of the unique features of Board dynamics with considerable but strategic impact on the board independence as well as the overall quality of corporate governance (García & Begoña, 2018). The size of board is vital to achieving the board effectiveness and improved firm performance especially from resource dependency perspective which place more emphasis on the board ability to co-opt limited and scares resource from various external links (Al-Rahahleh, 2017). Board size affects the quality of deliberation among members and ability of board to arrive at optimal corporate decisions.

Board size of an organisation is the number of directors on board of the organisation which includes executive and non-executive directors (Marimuthu, Lawrence, Maran & Udhaya-Sankar, 2019). The CBN Code prescribes a minimum and maximum board size of five and 20 directors respectively. The SEC Code prescribes a minimum of five directors while directing that the board of a company be of a sufficient size relative to the scale and complexity of the operations of the company. In line with best corporate practice, the Nigerian Corporate Governance Code of 2018 recommends a mix of executive directors (EDs), non-executive directors (NEDs) and independent non-executive directors (INEDs) on the board of a company. Companies can determine the size and composition of their board subject to the requirement of their sectoral codes. The average board size is 9.2 members, and most boards range from 3 to 31 members (Pathan & Faff, 2021), while some analysts think the ideal size is seven (Tampakoudis, Andrikopoulos, Nerantzidis & Kiosses, 2020).

2.1.3 Board Independence

Independence occurs when a board member has not been and is not currently employed by the company or its auditor and the board member's employer does not do a significant amount of business with the company (Bunea & Dinu, 2020). An independent director is a director of a board of directors who does not have a material or pecuniary relationship with company or related persons, except sitting fees. The presence of independent directors on a board can help to segregate the management and control tasks of a company and this is expected to offset inside members' opportunistic behaviours (Amr, 2017). Independent directors are directors that have no personal or professional relationship with a company, other than being a board

member. They are also often referred to as external directors (Borghesi, Chang & Mehran, 2016).

2.1.4 Financial Leverage

Financial leverage is the use of borrowed money (debt) to finance the purchase of assets with the expectation that the income or capital gain from the new asset will exceed the cost of borrowing (Adam, 2023). Leverage is an investment strategy of using borrowed money, specifically, the use of various financial instruments or borrowed capital to increase the potential return of an investment. Leverage can also refer to the amount of debt a firm uses to finance assets. Leverage results from using borrowed capital as a funding source when investing to expand the firm's asset base and generate returns on risk capital (James, 2023). Financial leverage which is also known as leverage or trading on equity, refers to the use of debt to acquire additional assets (Hayes, 2023). Financial leverage is the use of debt to buy more assets. Leverage is employed to increase the return on equity. However, an excessive amount of financial leverage increases the risk of failure, since it becomes more difficult to repay debt (Will, 2023). The use of financial leverage to control a greater amount of assets (by borrowing money) will cause the returns on the owner's cash investment to be amplified.

2.1.5 Debt-to-Equity Ratio

The debt-to-equity ratio (D/E) is a financial ratio indicating the relative proportion of shareholders' equity and debt used to finance a company's assets (Manglik, 2020). The Debt to Equity ratio is a leverage ratio that calculates the weight of total debt and financial liabilities against total shareholders' equity (Rohit, 2020). The debt to equity ratio is a financial ratio that compares a company's total debt to total equity. The debt to equity ratio shows the percentage of company financing that comes from creditors and investors (Aggreh, Nworie & Abiahu, 2022). A higher debt to equity ratio indicates that more creditor financing (bank loans) is used than investor financing (shareholders).

A debt to equity ratio of 1 would mean that investors and creditors have an equal stake in the business assets. Creditors view a higher debt to equity ratio as risky because it shows that the investors have not funded the operations as much as creditors have. In other words, investors do not have as much skin in the game as the creditors do. This could mean that investors do not want to fund the business operations because the company is not performing well. Lack of performance might also be the reason why the company is seeking out extra debt financing (Jena, 2023). A lower debt to equity ratio usually implies a more financially stable business. Companies with a higher debt to equity ratio are considered more risky to creditors and investors than companies with a lower ratio. Unlike equity financing, debt must be repaid to

the lender. Since debt financing also requires debt servicing or regular interest payments, debt can be a far more expensive form of financing than equity financing. Companies leveraging large amounts of debt might not be able to make the payments (Kappel, 2023).

2.2 Theoretical Framework

2.2.1 Knowledge-Based Theory

The knowledge-based theory of the firm considers knowledge as the most strategically significant resource of a firm. Originating from the strategic management literature, this perspective builds upon and extends the resource-based view of the firm (RBV) initially promoted by Penrose (1959) and later expanded by others (Wernerfelt 1984, Barney 1991). Although the resource-based view (RBV) of the firm recognizes the important role of knowledge in firms that achieve a competitive advantage, proponents of the knowledge-based view argue that the resource-based perspective does not go far enough. Specifically, the RBV treats knowledge as a generic resource, rather than having special characteristics. It therefore does not distinguish between different types of knowledge-based capabilities. Information technologies can play an important role in the knowledge-based view of the firm in that information systems can be used to synthesize, enhance, and expedite large-scale intra- and inter-firm knowledge management. The knowledge based view (KBV) of the firm is an extension of the RBV of the firm because it considers that organizations are heterogeneous entities loaded with knowledge. The resource base of the organization increasingly consists of knowledge-based assets (Sardo, Serrasqueiro & Alves, 2018)). The logic of the RBV of the firm suggests that unique characteristics of the intangible resources (especially knowledge) should determine the focus of research. Knowledge resources are particularly important to ensure that competitive advantages are sustainable, as these resources are difficult to imitate they are the foundation for sustainable differentiation (Ozkan, Cakan & Kayacan, 2017).

The KBV of the firm is the logical evolution of the RBV of the firm considering that it is a way to incorporate the temporal evolution of its resources and the capabilities that sustain the competitive advantage. Following a RBV approach, the central capabilities (such as the capabilities to define and solve the organizational problems) are the base for the specific competitive advantage of the firm (Wernerfelt 1984). The present management literature strongly points out capabilities and competences as the basis for the competitive advantage of the firm. KBV is an important approach towards organizational learning that forms the basis for establishing human capital involvement in the structural and routine activities of the firm. KBV proposes the establishment of heterogeneous knowledge structures across the

management hierarchies of a firm as a prerequisite condition for achieving sustainable knowledge-based competitive advantage. This is because knowledge-based resources are always characterized by difficulties of transmission, imitation, and social complexities.

2.3 Empirical Review

Nguyen and Huynh (2023) investigated the characteristics of the Board of Directors on the financial performance of the enterprise using sample data from 52 construction and real estate enterprises listed on the Vietnam stock exchange in the period 2006–2020. Using typical regression methods such as pooled OLS, FEM, REM, and assessing the defects of the research model, the FGLS method is selected. At the same time, due to the existence of endogenous phenomena and the nature of interdependence among enterprises in Vietnam, research using the instrumental variables two- step generalized method of moments (IV-GMM) is conducted in order to correct for cross-sectional dependence, autocorrelation, endogeneity, and heteroskedasticity in the analysis. Research results suggest that board size, female board members, meeting frequency, and board members' education have a positive influence on financial performance. Moreover, as the independence of the Board of Directors increased, the business efficiency decreased. The research also found a positive relationship of tangible fixed assets, and a negative relationship between capital structure choice, firm size, and corporate financial performance.

Adegboyegun and Igbekoyi (2022) examined the effect of board diversity on the financial performance of manufacturing firms in Nigeria. The study comprised of 64 listed manufacturing firms as at 31st December 2020, and sample size of 20 listed manufacturing firms were selected using purposive sampling technique. Data were obtained from annual reports of the selected firms from 2011 to 2020. Descriptive statistics and panel regression estimation techniques were used to analyze the data collected. The findings showed that board diversity has an insignificant effect on performance except for financial expertise diversity with a positive effect on financial performance, and there is a presence of long run relationship with firm performance. Based on these findings, the study therefore concluded that diversity on the board in terms of gender, ethnicity and educational background will not really improve or reduce performance of the firms while diversity in terms of financial expertise will do.

Alshirah, Alfawareh, Farhan, Al-Eitan, Bani-Khalid and Alsqour (2022) examined the effect of managerial/board gender diversity and corporate governance structure on firm performance in a Jordanian business environment. Data were collected from nonfinancial companies listed on the Amman Stock Exchange from 2018 to 2020. Data analysis was carried out using the random-effects estimator, which was considered as the most suitable for this study. The results

disclosed that female representation on the board of executives of Jordanian companies had a positive but insignificant effect on corporate performance, as measured by the return on equity, indicating that this variable has no effect on the performance of firms in Jordan. Both family ownership and board size had negative significant effects on performance, but for the moderating effect, corporate governance structure had no effect on the relationship among CEO duality, institution ownership, government ownership, independent directors, and firm performance.

Aurelian, Dumitrescu, Micu and Lobda (2022) examined the impact of board diversity and board committees on the financial performance of the companies listed on the Bucharest Stock Exchange (BSE), Romana. In order to test the influence of these characteristics, detailed data on more than 70 firms were collected by hand, for the 2016–2020 period, and comprehensive regression models were estimated. The findings showed that there are positive effects of board diversity especially with regard to the independent board members. In terms of the board committees, the audit committee is found to have a favourable influence. The regression coefficients imply that a 10% increase in the share of independent board members would be associated with a 0.93% increase in ROE. Based on these findings, it can be argued that improving the corporate governance practices of the companies listed on the BSE would increase the performance and the value of these firms.

Khan and Wang (2021) explored board diversity and its impacts on financial performance from selected commercial banks (CB) in China. The data sample for the research comprised selected CBs in China for the period from 2008 to 2019. Applying selection standards provided a data sample of 17 commercial banks. The study employed the generalized method of moments (GMM) regression model constructed on 170 observations to identify the variables' relationship. The findings showed that female independent directors positively and significantly affect bank financial performance. It was also found that the existence of female directors alone does not positively and significantly improves banks' financial performance.
Purushottam (2020) examined whether board size has any influence on firm's financial performance. The study conducted within 2018-2019 for BSE 100 companies in India. The study considered Return on Assets (ROA), Profit before Interest and Tax(PBIT), Return on Equity (ROE), Earning per share (EPS), Dividend per share (DPS) and Tobin's Q as measures of financial performance, whereas board size has been taken as an independent variable. Spearman's rho correlation analysis was used to perform the analysis as the distribution of the variables was not normal. The results showed that ROA, ROE and Tobin's Q is more for companies with board size between eight and ten. Also, medium size boards were found to perform better than either very small or very big boards. As regard the impact of board size

on firm performance, results suggested that for ROE, ROA, PBIT, EPS, DPS and Tobin's Q are statistically not significant. The Board size has no impact on the performance of the firm.

Nwezoku and Egbunike (2020) investigated the effect of board diversity on corporate tax aggressiveness of quoted healthcare manufacturing firms in Nigeria. The study adopts the *ex-post facto* research design. The sample was restricted to eleven companies quoted under the healthcare sector of the Nigerian Stock Exchange. The study relied on secondary data obtained from annual reports and accounts for the periods 2011 to 2018. The hypotheses were tested using Panel Estimated Generalised Least Squares; and, Two Stage Least Squares for Robustness check. The results of the empirical data analysis revealed that nationality diversity has a non-significant positive effect. The study concluded that board diversity affected the effective tax rate of quoted healthcare manufacturing firms in Nigeria.

Alghadi, Ahmad and Adilah (2019) examined the influence of corporate governance on company cash holding by explaining the relationship between board gender, multiple directorship and cash holding using a sample of 87 non-financial companies including industrial and service companies that were listed on the Amman Stock Exchange from 2011 to 2017. By using Ordinary Last Square regression model (OLS). The findings indicated that board gender, multiple directorship positively influenced cash holdings

Muhammad, Liu and Huang (2019) examined whether board gender diversity affects corporate cash holdings using S&P 1500 index firms in the US for the period 2006–2015. The study employed difference-in-differences (DID), propensity score matching (PSM) and an instrumental variable approach (two-stage least squares – 2SLS). The study documented a significantly negative relationship between board gender diversity and cash holdings.

Akinwunmi, (2018) examined the relationship between board Ethnic and Religious diversity and performance of quoted manufacturing companies in Nigeria. The study adopted ex-post facto research design. Secondary data of purposively selected fifty three (53) listed Nigerian manufacturing companies from 2006 to 2015 were analyzed using descriptive and inferential statistics. The findings showed a positive but insignificant relationship between Ethnicity and performance measure of ROA (â= 0.008; $p > 0.1$). There was a negative and insignificant relationship with Tobin's Q (â = -0.884; $p > 0.1$). Board religious diversity was negatively and insignificantly related to ROA (â = 0.002; $p > 0.1$) and Tobin's Q (â = -0.260; $p > 0.1$).

Lanis, Richardson and Taylor (2017) conducted a study on the relationship between Board of director gender and corporate tax aggressiveness. The study relied on secondary data obtained from the period 2006 to 2009. The data were analysed using ordinary least squares regression.

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The empirical results showed a negative and statistically significant association between female representation on the board and tax aggressiveness.

3. MATERIAL AND METHOD

This study utilised *ex-post facto* research design in conducting the research. *Ex-Post Facto* seeks to find out the factors that are associated with certain occurrences, conditions, events or behavior by analyzing past events or already existing data for possible casual factors (Brooks, 2019; Nworie, Okafor & John-Akamelu, 2022). Primarily, this study made use of secondary data. The data were sourced from publications of the Nigerian Exchange (NGX) Group, fact books and the annual report and accounts of the sampled listed commercial banks. To obtain the age of the directors, their birth year was subtracted from the annual report year. The directors' birth year was obtained from corporate affairs commission (CAC 7) (appointment of director) form.

The population for this study consisted of fourteen (14) listed commercial banks in Nigeria as at 31st December 2022. This include: Access Bank Plc; Eco Bank Plc; FCMB Bank Plc; Fidelity Bank Plc; First Bank Plc; Guaranty Trust Bank Plc Jaiz Bank; Stanbic IBTC Plc; Sterling Bank Plc; Union Bank Plc; United Bank of Africa Plc; Wema Bank Plc; Zenith International Plc; Unity Bank Plc.

Purposive sampling technique was adopted to select commercial banks with up to date and complete annual reports and accounts for the study period (2012-2022). The sample size of this study, therefore, consisted of thirteen (13) listed commercial banks hat were continuously listed and actively trading on the floor of the Nigerian Exchange (NGX) Group during the period 1st January 2012 to 31 December 2022 and whose financial statements are available and have been consistently submitted to NGX for the period under study. They are: Access Bank Plc; Eco Bank Plc; FCMB Bank Plc; Fidelity Bank Plc; First Bank Plc; Guaranty Trust Bank Plc; Stanbic IBTC Plc; Sterling Bank Plc; Union Bank Plc; United Bank of Africa Plc; Wema Bank Plc; Zenith International Plc; Unity Bank Plc.

This study adapted and modified the model of Borlea, Achim and Mare (2017):

$ROCE = \beta o + \beta_1 BDS_{it} + \beta_2 FD_{it} + \beta_3 GDV_{it} + \mu_{it}$ - - - eqn 1.

Where:

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BDS = Board Size

FD = Foreign Directorship

GDV = Gender Diversity

ROCE = Return on Capital Employed

In line with the adapted model, the following equations were formulated:

$DER_{it} = \beta o + \beta_1 BDS_{it} + \mu_{it}$ - - Eqn 2

$DER_{it} = \beta o + \beta_1 BIND_{it} + \mu_{it}$ - - - - Eqn 3

Where:

β_o = Constant term (intercept)

β_{it}= Coefficients of Board Diversity for bank í in period t

μ_{it} = Error term/unexplained variable(s) of bank í in period t

DER_{it} = Debt to Equity Ratio of bank í in period t

BDS_{it} = Board Size of bank í in period t

$BIND_{it}$ = Board Independence of bank í in period t

í = individual banks (1,2,…13)

t = time periods (1,2,3,… 11)

Descriptive Statistics were employed in this study to summarily describe the mean, median, kurtosis, skewness, maximum and minimum values of the variables. Inferential statistics were also utilized in this study with the aid of E-Views 10.0, using:

Coefficient of correlation: which is a good measure of relationship between two variables that tell us about the strength of relationship and the direction of the relationship as well.

Panel Least Square (PLS) regression analysis: was used to predict the value of the dependent variable based on the value of the independent variable.

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Table 1 Variables Definition and Measurement Units

Variable Type	Indicators	Variable Symbols	Definition and Measurement
Independent Variable (Board Diversity)			
	Board Size	BDS	Total Number of Directors on the Board
	Board Independence	BIND	Number of Independent Directors / Total Directors on the Board.
Dependent Variable			
	Debt to Equity Ratio	DER	Total Debt / Total Shareholders' Equity

Source: Aurelian, Dumitrescu, Micu,and Lobda (2022)

4. RESULT AND DISCUSSIONS

4.1 Descriptive Analysis

Table 2 Descriptive Statistics of Study Variables

	DER	BDS	BIND
Mean	0.306364	0.738182	0.467273
Median	0.240000	0.490000	0.480000
Maximum	0.650000	1.420000	0.950000
Minimum	0.090000	0.340000	0.020000
Std. Dev.	0.176311	0.414000	0.301532
Skewness	0.712404	0.705373	0.234660
Kurtosis	2.253810	1.734827	2.051789
Jarque-Bera	1.185652	1.645815	0.513043
Probability	0.552763	0.439153	0.773738
Sum	3.370000	8.120000	5.140000
Sum Sq. Dev.	0.310855	1.713964	0.909218
Observations	143	143	143

Source: E-Views 10.0 Descriptive Output, 2024

This study considered descriptive statistics (mean, standard deviation, minimum and maximum) for the panels for 143 observations (that is, 13 banks x 11 years). Table 2 depicts DER of an average of 30.64% with a minimum of 9%, a maximum of 65% and at a standard deviation of 0.176311. On the average, BDS stood at 0.7381 with a standard deviation of 0.414, a maximum of 1.4200 and a minimum of 0.3400. On the average, BIND stood at 46.72%, the minimum BIND stood at 2% while the maximum BIND stood at 95% at a standard deviation of 0.3015.

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4.2 Test of Hypotheses

4.2.1 Hypothesis One

H_{o1}: Board size has no significant effect on debt to equity ratio of listed commercial banks in Nigeria.

Table 3: Panel Least Square Regression Analysis for Hypothesis I

Dependent Variable: DER

Method: Panel Least Squares

Date: 01/08/24 Time: 13:44

Sample: 2012 2022

Periods included: 11

Cross-sections included: 13

Total panel (balanced) observations: 143

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.228404	0.029346	7.783067	0.0000
BDS	0.105965	0.035042	3.023948	0.0030

R-squared	0.160903	Mean dependent var	0.306675
Adjusted R-squared	0.154243	S.D. dependent var	0.170050
S.E. of regression	0.165373	Akaike info criterion	-0.747336
Sum squared resid	3.856113	Schwarz criterion	-0.705897
Log likelihood	55.43451	Hannan-Quinn criter.	-0.730497
F-statistic	9.144260	Durbin-Watson stat	1.530160
Prob(F-statistic)	0.002965		

Source: E-Views 10.0 Regression Output, 2024

The implication of the regression model is that a unit increase in BDS will cause DER to increase by 10.60%. Table 3 also shows that BDS is positively and significantly related with the DER of listed commercial banks in Nigeria. The beta coefficient of the variable; β_1 is 0.105965. The slope coefficients indicate that $X_1 = 0.0030 < 0.05$. Thus, a significant and positive relationship exists between BDS and DER. As evident in table 3, the R^2 is 0.160903. This means that approximately 16.09% of the variations in the sampled commercial banks' debt to equity ratio can be explained by BDS.

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4.2.1.1 Decision

The overall regression result with P-value = 0.002965 provides a basis for accepting the alternative hypothesis, which states that board size has a significant and positive effect on debt to equity ratio of listed commercial banks in Nigeria at 5% level of significance. The result of this study is consistent with the works of Aurelian, Dumitrescu, Micu and Lobda (2022); Nwezoku and Egbunike (2020) but contrary to the findings of Adegboyegun and Igbekoyi (2022); Purushottam (2020).

4.2.2 Hypotheses Two

Ho_2: Board independence has no significant effect on debt to equity ratio of listed c ommercial banks in Nigeria.

Table 4: Panel Least Square Regression Analysis for Hypothesis III

Dependent Variable: DER

Method: Panel Least Squares

Date: 01/08/24 Time: 13:48

Sample: 2012 2022

Periods included: 11

Cross-sections included: 13

Total panel (balanced) observations: 143

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.016278	0.001354	12.01889	0.0000
BIND	0.015668	0.002474	6.333594	0.0000

R-squared	0.221487	Mean dependent var	0.023588
Adjusted R-squared	0.215965	S.D. dependent var	0.009571
S.E. of regression	0.008475	Akaike info criterion	-6.689520
Sum squared resid	0.010127	Schwarz criterion	-6.648082
Log likelihood	480.3007	Hannan-Quinn criter.	-6.672682
F-statistic	40.11442	Durbin-Watson stat	1.776291
Prob(F-statistic)	0.000000		

Source: E-Views 10.0 Regression Output, 2024

The implication of the regression model is that a unit increase in BIND will cause DER to increase by 1.57%. Table 4 also shows that BIND is positively and significantly related with the DER of listed commercial banks in Nigeria. The beta coefficient of the variable; β_1 is

0.015668. The slope coefficients indicate that X_1 = 0.0000 < 0.05. Thus, a significant and positive relationship exists between BIND and DER. As evident in table 4, the R^2 is 0.221487. This means that approximately 22.15% of the variations in the sampled commercial banks' debt to equity ratio can be explained by BIND.

4.2.2.1 Decision

The overall regression result with P-value = 0.000000 provides a basis for accepting the alternative hypothesis, which states that board independence has a significant and positive effect on debt to equity ratio of listed commercial banks in Nigeria at 5% level of significance. The output of this study is consistent with the results of El-feky (2023); Alghadi,Ahmad and Adilah (2019) but opposite the findings of Muhammad, Liu and Huang (2019).

CONCLUSION AND RECOMMENDATIONS

This study ascertained the effect of board diversity on financial leverage of listed commercial banks in Nigeria for a thirteen year period covering from 2012-2022. The independent variable (board diversity) was proxied by board size and board independence while financial leverage which is the dependent variable was measured using debt-to-equity ratio. The study obtained data from annual account and publications of the commercial banks that operated during 2012-2022. With the aid of E-Views 10.0, Descriptive Statistics of this study was applied, while Inferential Statistics using Pearson correlation coefficient and Panel Least Square regression analysis were employed. Specifically, this study revealed that Board Size has a significant and positive effect on debt to equity ratio (β_1 = 0.105965; P-value = 0.0030); Board Independence has a significant and positive effect on debt to equity ratio (β_1 = 0.015668; P-value = 0.0000). Conclusively, board diversity has a significant and positive effect on financial leverage of listed commercial banks in Nigeria at 5% level of significance.

On the premise of these study findings, the following recommendations were made:

i. A large board consisting between 11 to 15 directors should be encouraged, since large boards size influences the financial leverage and firm performance through effective monitoring and controlling.

ii. Considering the positive effect of board independence on stock price, it is suggested that company boards should have an independent majority which is more likely to consider the best interests of shareowners first, also is likely to foster independent decision-making and to mitigate conflicts of interest that may arise.

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