Board Attributes and Performance of Financial And Non-Financial Companies in Nigeria

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Abstract

The issue of corporate governance resurfaced because of the global crisis that affected organisations across the globe. The management of an organisation plays a vital role in its survival. Therefore, the study examined the effect of Board attributes on the organisation's performance in financial and non-financial sectors. The study employed the Generalised Method of Moments (GMM), Panel Estimators (Fixed effect, random Effect and Pooled ordinary least square), Panel Generalised Least Square (PGLS)-Panel Corrected Standard Error Estimator (PCSE) using data obtained from the financial statements of the fifteen different companies from 2008 to 2021. Findings from the empirical investigation show that in the panel of all firms having more women on the board adversely affects financial performance, whereas having more independent directors boosts financial performance. Comparing the impact of Board attributes on financial performance between financial and non-financial firms, the chairman doubling as CEO, the size of the members, and more women on the board are all adverse determinants of financial performance in nonfinancial companies. On the other hand, having more independent board members is a positive determinant of financial performance in non-financial firms. This is different from what is obtainable in financial firms as all the attributes have a negligible effect on firm performance, except board size, which adversely determines financial performance. This study underscores the importance of selecting competent, independent directors, focusing on the quality and expertise of women for board membership rather than merely aiming for board diversity and maintaining a small board size to enhance financial performance in the listed firms in Nigeria.

Keywords: Board Attributes, Corporate governance, financial performance, financial companies, non-financial companies.

Introduction

The attributes of the board of directors have become a subject of growing concern worldwide for obvious reasons, such as avoiding organisational failures and economic crises. The board of directors underscore the framework set to execute the company's targets and mitigate financial mismanagement, often resulting from a breakdown in corporate governance (Fallatah & Dickins, 2012; Shahwan, 2015). As the vanguard of corporate governance, the board of directors holds the authority to chart the course of the company and carry out specific responsibilities, including maximising the wealth of shareholders, optimising investors' returns, monitoring the financial performance of the firm, and ensuring the stability of the company (Kakanda et al., 2016). Although not statutory, most companies opt for a board of directors to safeguard the interests of the shareholders, check potential abuses of power, and balance between controlling and noncontrolling interests in the company.

Companies' stability, integrity, and profitability now depend on the effectiveness of their corporate governance practice, which aims to adapt to the dynamic and evolving business and macroeconomic environment (Lasisi, 2022). Corporate governance practices, particularly the board members' attributes, have been widely examined as a crucial determinant of a company's financial and non-financial performance. Studies suggest that board attributes include a range of factors like board size, board independence, board diversity, CEO duality, and board expertise (Olufemi et al., 2023), with board composition suggested to be the most crucial as it reflects the diversity and expertise of board members (Olaoye et al., 2022). Diverse boards can offer a wider range of perspectives and improve financial performance. For instance, independent directors not affiliated with the company or its management can enhance company outcomes with objectivity, accountability, and conflict resolution (Musa & Onipe, 2023).

A thorough review of empirical literature revealed that, although there exists an abundance of research on the characteristics of the board of directors and how it affects the performance of firms, these studies have only generated a mixed bag of findings through the equivocal results generated. This makes it a difficult task to draw conclusions about the relationship between members of board characteristics and the performance of organisations. Moreover, organisational differences and peculiarities like governance structures, the size and culture of the company, operational diversity, level of development, period examined, and the regulatory requirements have been identified as some of the justifications for the contradictory and inconsistent results (Haji, 2015).

Additionally, there is limited literature and little consideration focusing on non-financial firms, while most past studies focused more on financial sectors. No study (to the best of this study's knowledge) has attempted to analyse and compare this relationship in Nigeria, both in the financial and non-financial sectors, simultaneously using selected firms quoted on the stock market.

Moreover, the study of board members' attributes and corporate performance in Nigeria is important for two main reasons. First, it is essential to address the challenges and gaps in Nigeria's practices and corporate governance framework. Studies have shown that Nigeria has a weak corporate governance culture, characterised by poor board oversight, lack of transparency and accountability, inadequate disclosure and reporting, and high incidence of corruption and fraud (Emeka-Nwokeji, 2019; Okolie & Uwejeyan, 2022). These issues can undermine the trust and confidence of investors, creditors, customers, and other stakeholders and negatively affect the company's performance and reputation. There is also limited empirical evidence on how the presence and absence of certain board qualities influence the company's performance in the Nigerian context. Some studies have found positive, negative, or insignificant relations between board attributes and company performance, depending on the company's industry, sector, size, and nature (Okolie & Uwejeyan, 2022).

Secondly, Nigeria has introduced sector-specific corporate governance codes, such as the SEC Code 2003 for public companies, the PENCOM Code 2008 for licensed pension fund operators, the NAICOM Code 2009 for the insurance industry, the CBN Code 2014 for banks and discount houses, the Code 2016 for the telecommunications industry, and the National Code of Corporate Governance 2016 to establish standards for public and private companies to align with international best practices and enhance both corporate and economic performance in Nigeria. However, the inherent goals, implementation, and effectiveness of the governance codes implemented so far have been questionable, as some faced criticism and some were suspended.

Studies that have examined the influence of different aspects of corporate governance post the introduction of these codes have come up with mixed and indecisive findings on the effectiveness of these corporate governance codes (Emile et al., 2014; Rebeiz, 2015; Buallay et al., 2017; Borlea et al., 2017; Sarpong-Danquah et al., 2018; Mohan & Chandramohan, 2018).

Therefore, this paper aims to fill the gap in the literature by investigating the impact of board members' attributes on the performance of financial and non-financial listed firms in emerging economies like Nigeria. The rest of the paper is organised into four sections: Section two reviews existing literature and theories, Section three describes the methodology, Section four presents the estimation results and discusses the findings and Section five concludes and highlights the policy implications.

Literature Review and Hypotheses Development

Theoretically, the agency theory is a business management theory often used to explain the supervisory role of the board of directors in the relationship between the principals and their agents. Based on agency theory, the principals, who are the owners or shareholders in an organisation, hire agents (executives) to manage their resources efficiently and effectively. The sole aim of appointing the executives or top management is to provide optimal returns on investment. The executives (agents) often possess significant freedoms and abilities to manage shareholders' (principals') resources. However, it is believed that the executives may sometimes have some other objectives that conflict with that of the owners (principals), hence ignoring shareholders' wealth maximisation objective (Masson, 1971). Specifically, the management often attempts to increase personal wealth and build a reputation through rapid growth and diversification at the expense of increasing the owners' or shareholders'

wealth profile by maximising the firm's market value (Vargas-Hernandex & Teodoro, 2018). The management is often dogmatic in their approach. It may need to be forced by the shareholders and/or external investors to pursue an approach that favours the maximisation of the owner's wealth.

According to Fama and Jensen (1983a), there are specific market and organisational mechanisms that can help mitigate the conflicts and misalignment that often arise between the principals and agents. One of the most crucial organisational mechanisms is the board of directors in organisations. The board of directors' members are authorised by the shareholders (as their representatives) to supervise and oversee the activities and engagement of the executives and management. In this regard, the board of directors is expected to perform the painstaking function of monitoring and rewarding top executives to ensure the attainment of shareholders' wealth maximisation (Zahra & Pearce II, 1989). Although the board delegates the executives and management to initiate and implement various decisions, it is the board that has the control and authority to ratify and monitor significant policy initiatives and to hire, fire, and set the compensation of top-level managers (Fama & Jensen, 1983a). However, the board must possess specific attributes to reduce agency problems and perform effectively. According to Olufemi et al. (2023), the extent to which the board would be effective in carrying out its assignment depends on other exogenous factors, which, among others, are made up of specific board characteristics like board size, board gender, CEO duality, board educational qualification and board diversity.

Board Attributes and Performance of Financial Firms

The relationship between the board of directors' features and financial organisations' performance has extensively been studied. Connelly and Limpaphayom (2004) examined this relationship among life insurance firms in Thailand and found that board composition positively impacts their profitability. However, Bukair and Abdul Rahman (2015) discovered that both the board's size and composition negatively affect bank performance. Among Bangladeshi banks, findings from the study of Muttakin and Ullah (2012) found that board independence has a significant positive relationship with their performance. Employing a panel regression analysis, Sahafi, Rodrigs, and Barnes (2015) examined the effect of banking sector corporate governance on their financial performance in Suadi-Arabia. Findings from the study suggest that the status of the CEO exerts an insignificant impact on the financial performance of the banks. Fariha, Hossain and Ghosh (2020) analyse the effect of board characteristics and audit committee attributes on the firm performance of publicly listed commercial banks in Bangladesh. Using different measures of performance (ROA, ROE, Tobin's Q and stock returns), the authors found different relationships exist between the board attributes examined and the bank's performance indicators.

In Nigeria specifically, Barisua et al. (2012) found that board of directors' composition relates differently with performance indicators. According to them, board composition is positively related to performance (EPS) and negatively related to performance (net profit margin) of publicly traded Deposit Money Banks in Nigeria. Abu et al. (2016) findings revealed that grey directors have negatively significant while foreign directors have positively significant relationship with firm performance. Eluyela et al. (2020) examined the impart of grey directors on board on selected deposit money banks' performance as well as the causality between the two. The findings from the study revealed that there is no flow of joint long-run causality while there's short-run causality grey directors to performance.

Furthermore, they found a significant positive relationship between indigenous directors, board size, non-executive directors and performance of the selected banks. However, Mustapha, Rashid, Bala, and Musa (2020) found that the relationship between board independence, board gender, board size, and financial performance of the 15 selected listed banks is negatively insignificant. In a unique attempt, Oziegbe and Ogbodo (2021) examine the effect of board attributes on the firm performance of Nigerian quoted banks with international authorisation. The evidence from their results revealed that all the attributes, except board meetings, had an insignificant effect on the banks' performance.

Board Attributes and Performance of Non-financial Firms

Although the impact of board attributes on the performance of non-financial firms has not received adequate attention, some notable studies have been conducted in this regard. Al-Matari et al. (2012) analysed the connection between board attributes and the firm performance of nonfinancial listed firms in Kuwait. The results of the analysis indicated that there is a positive relationship between board attributes and firm performance in Kuwaiti. Badu and Appiah (2017) investigation revealed that board size improves the performance of non-financial listed firms in Nigeria and Ghana.

With regard to Nigeria, Oba and Fodio (2013) established that the presence of female directors and the proportion of female directors have positive impacts, while board size had an insignificant effect on the financial performance of the selected non-financial listed companies. Emeka-Nwokeji and Agubata (2019) analysis revealed that Board size and board gender diversity have a positive effect, board independence and board remuneration have a negative effect, while directors' shareholding has an

insignificant effect on the corporate performance of non-financial firms. Aifuwa, Musa, Gold, and Usman (2020) found board size insignificantly related to the performance of consumer goods firms listed on the Nigeria Stock Exchange.

Relations between Board Size and Performance

Board size is the total number of members serving on the board and with voting privileges (Ogege & Boloupremo, 2014; Ongore et al., 2015). Due to the belief that the board size is the most crucial of board attributes, a lot of effort has gone into determining the appropriate board size for an organisation. Some researchers (Abdurrouf, 2011; Nanka-Bruce, 2011; Jensen, 1993) believe that smaller board size is more adequate and effective because it reduces agency conflicts and encourages efficiency and coordination. Others, on the other hand, argued that larger board sizes are more appropriate (Zahra & Pearce II, 1989). However, there is still no universally accepted number as the ideal board size (Dabor et al., 2015). To guarantee the efficiency of operations, skills diversity and improve performance, Lipton and Lorsch (1992), Jensen (1993), and Brown and
Caylor (2004) recommended a board size of between seven and ten members. Most importantly, Adams and Mehran (2003) found that efficient board size depends on the industry and the firm size.
Empirically, some studies (Shahzad et al., 2015; Onakoya, Fasanya, & Ofoegbu, 2014; Topal
& Dogan, 2014; Akpan & Amran, 2014; Moscu, 2013, Sheikh, Wang & Khan, 2011) have found that board size to be a positive influence on organisational performance. Conversely, board size may negatively affect firm performance (Mohan & Chandramohan, 2018; Gambo et al., 2018; Dabor et al., 2015; Ali & Nasir, 2014; Yawson, 2006). A few other studies found no correlation between board size and firm performance (Aggarwal et al., 2007; Sarpong-Danquah et al., 2018; Ciftci et al., 2019). As a result of the mixed findings, this study proposes to test the null hypothesis that:
H_0: Board Size does not significantly impact the performance of financial and non-financial firms in Nigeria.

Relations between Board Composition and Performance

Board composition refers to the number of non-executive directors on the board of directors. It is calculated as the ratio of non-executive directors to the total number of directors (Barisua et al., 2012; Yasser et al., 2011). In addition, several authors (Fama & Jensen, 1983; Spencer, 1983; Jones & Goldberg, 1982) opined that a higher board composition leads to greater efficiency in board performance because it increases freedom, independence and objectivity. On the other hand, Geneenn (1984) and Vance (1983) believed that higher board composition would result in a deficiency in the time, skill and organisational knowledge necessary to implement their objectives.
Similarly, the findings in the empirical literature on the effects of board composition on firm performance are also mixed. Studies such as Gambo, Bello, and Rimamshung (2018), Abdurrouf (2011), Abidin et al. (2009), Connelly and Limpaphayom (2004), and Kiel Nicholson (2003) observed a positive impact of board composition on firm performance. Other groups of empirical studies, such as Kwanbo and Abdul-Qadir (2013), Marn and Romuald (2012) and Bozec (2005), found the impact of board composition on firms' performance to be discouraging. Some studies performance (Mohan & Chandramohan, 2018; Buallay et al., 2017; Dabor et al., 2015; Akpan & Amran, 2014) have also found that board composition has an inconsequential effect on companies. Thus, this study proposes the null hypothesis that:
H_0: Board Composition does not significantly impact the performance of financial and nonfinancial firms in Nigeria.

Relations between Board Diversity and Firm Performance

Board diversity focuses on the differences among the board members. These differences can be in terms of gender, age, skills and education, etc. This study focused on gender diversity alone, which measures the level of female representation on a company's board. Recently, the lack of women in the top management and boards of companies has been questioned. Global businesses have had to make a conscious effort regarding their policies to include more women. Although women's participation in middle-level management has increased significantly, their involvement at the corporate governance level is still far from the desired level globally (Hede, 2000). This has been considered very harmful to firms' economic and social status.

In scholarly research, board gender diversity as it affects performance is gaining increasing interest (Labelle et al., 2015). Empirical studies across countries revealed positive, negative and insignificant relationships between gender diversity and performance. The positive relationship was reported by Post and Byron (2015) and Campbell and Minguez-Vera (2008), among others; Adams & Ferreira, 2009; Ahern & Dittmar, 2012; Matsa & Miller, 2013; Bøhren and Staubo 2016 reported a negative

relationship between them while others (Carter et al., 2010; Chapple & Humphrey, 2014) found the relationship to be insignificant statistically. Thus, this study proposes the null hypothesis that:

H_0: Board Diversity does not significantly impact the performance of financial and nonfinancial firms in Nigeria.

Relations between CEO Duality and Firm Performance

CEO duality or a one-tier board system is a situation where the same person simultaneously functions as the company board's chief executive officer and chairman. Understandably, this is often considered inappropriate as the monitoring and oversight roles of the board cannot be performed effectively and efficiently in such a situation. Again, the independence of boards cannot be guaranteed in such a system. Agency theorists like Fama and Jensen (1983) believed that such an arrangement weakens the board powers and increases agency cost, while the stewardship theorists (Charan, 1998) opined that CEO duality produces improved performance due to the existence of a unified and strong leadership in the company.

Like other board attributes, empirical evidence suggests that the effect of CEO duality on corporate performance is ambiguous (Sahin et al., 2011). Studies such as Holtz and Sarlo (2014), Kajola (2008) and Peng et al. (2007) found that CEO duality improves corporate performance, Shahzad et al (2015); Anis et al. (2017) and Mohan & Chandramohan (2018) found that CEO duality is harmful to corporate performance while Abidin, Kamal and Jusoff (2009) and Dalton et al. (1998) found insignificant impact of CEO duality on firms' performance. Therefore, this study proposes the null hypothesis that:

H_0: CEO Duality does not significantly impact the performance of financial and nonfinancial firms in Nigeria.

Methodology and Model Specification

Sample and Data

The study employed panel data sourced from the annual financial statements of 15 listed firms conveniently sampled on the Nigeria Stock market between 2008 and 2021. The sample period was selected based on data availability and to ensure that the issue of structural breaks in the firms' performance is avoided (Otonne et al., 2023). The 15 selected firms include First Bank, Eternal Oil and Gas, Zenith Bank Plc, United Bank for Africa, Cadbury Nigeria Limited, Guaranty

Trust Bank, First City Monument Bank, Stanbic Plc, Flourmill, Guinness Plc, Access Bank Plc, Nestle Nigeria Plc, Lafarge Plc, Conoil Plc and Dangote Sugar Plc. To ensure that the industry-specific effect is removed, foster comparison and close the gap established in the literature, the study divided the selected companies into financial and non-financial firm samples. Therefore, three models were stipulated, including the model for the financial, non-financial, and all firms' samples. The dependent variables are financial performance measured as return on assets and return on equity, board member attributes measured by board diversity, board composition, board size and CEO duality. The control variables include firm size and leverage, measured as the total asset of each firm and level of indebtedness, respectively. Table 1 below gives more information on the operational definition of the variables.

Table 1: Operational definition of Variables

Variable	Measure	Definition
Return on Asset	Financial performance	ROA= Profit after tax/Total Asset;
Return on Equity	Financial performance	ROE= Profit after tax/Total Equity;
Leverage	Level of indebtedness	LEV= Total Debt/Liability Total Asset;
Size of the firm (log)	Capacity	Total asset (log)
Board diversity	Board Attributes	BD= Total Women/Total board member;
Board composition	Board Attributes	BC= Total Independent member/Total board member;
Board Size	Board Attributes	Total members on the board
CEO duality	Board Attributes	1, if CEO duality exists and 0, otherwise

Data Analysis Techniques

The empirical analysis in this study includes preliminary analysis such as descriptive statistics, correlation analysis, cross-sectional dependency test, estimation and post-estimation test. The study employed the Panel Generalised Method of Moments (PGMM) for the full sample, Panel Generalised Least Square (PGLS) and Panel Corrected Standard Error Estimator (PCSE) to account for the cross-sectional dependence for the non-financial firm sample and the Pooled ordinary Least Square (POLS), fixed effect and random effect estimators for financial firm samples. The Hausman test is employed to select the most efficient model between the fixed effect and random effect estimators, while the Lagrange multiplier is used to select the most efficient model between POLS and the random effect model. The redundant fixed effect, on the other hand, is used to select between the fixed effect estimator and the POLS. The post-estimation test, which include serial correlation text, was examined to check for the reliability and accuracy of the models.

Model Specification

Following Khatab et al. (2011) and Azeez (2015), the model of the study is functionally stated in equation (1) to (2):

$$ROA_{it} = f(BC_{it}, BD_{it}, BS_{it}, CEOD_{it}, LEV_{it}, FS_{it}) \dots \dots \dots \dots \dots (1)$$
$$ROE_{it} = f(BC_{it}, BD_{it}, BS_{it}, CEOD_{it}, LEV_{it}, FS_{it}) \dots \dots \dots \dots \dots (2)$$

Expressing equation (1) to (3) in econometric form gives:

$$ROA_{it} = \alpha 1 + \beta 1 BC_{it} + \gamma 1 BD_{it} + \theta 1 BS_{it} + \emptyset 1 CEOD_{it} + \delta 1 LEV_{it} + \rho 1 FS_{it} + it \dots \dots \dots \dots \dots (3)$$
$$ROE_{it} = \alpha 2 + \beta 2 BC_{it} + \gamma 2 BD_{it} + \theta 2 BS_{it} + \emptyset 2 CEOD_{it} + \delta 2 LEV_{it} + \rho 2 FS_{it} + it \dots \dots \dots \dots \dots (4)$$

Where BC, BD, BS, and CEOD are the components of board member attributes used in this study, which represent board composition, board diversity, board size and CEO duality, respectively. The study controls for leverage and firm size in the model. We take a cue from the widely used measures in the literature to measure the listed firms' performance. ROA and ROE, representing Return on the asset and return on Equity, respectively, are the measures used in the study to capture financial performance. α_i, β_i, γ_i, θ_i, $\emptyset_i$, δ_i, ρ_i, $_{it}$ are intercept, partial coefficient slope and stochastic error term respectively.

Results

Descriptive Statistics

The results in Table 2 show the descriptive analysis of the variables for financial, nonfinancial, and all firms samples. The table shows that all-firm's sample financial performance measures have different features. Whereas the average return on asset (ROA) is about 0.52% with a minimum of -1472% and a maximum of 94.80%, the average return on equity is negative at 3.97% with a minimum of -4839% and a maximum of 187.30%. The variance of ROE is more significant at 3.36 compared to the variance of ROA at 1.03. The Jarque-Bera test indicates the absence of a normal distribution of the variables. This means that on average, the return on assets is higher than the return on equity in the sample of all the firms.

The average ratio of independent directors to total board members is 40% with a standard deviation of 0.49, while the average board diversity, measuring the ratio of women on the board to total board members across all firms, is 0.1753, oscillating between a minimum and maximum value of 0.00 and 0.444, respectively with a standard deviation of 0.1050. The board size recorded an average of 12 members, whereas the CEO duality is at 0.54, which is approximately 1, suggesting the practice of CEO duality across all firms. For the control variable, firm size measured by the logarithm of a total asset shows a mean value of N9bn, while the leverage ratio, which measures the debt-to-asset ratio of firms, averages 0.63, showing that a significant portion of the company asset is financed by debt. Except for board diversity, all variables in the all-firm sample have abnormal distribution observable with the Jarque-Bera tests and their p-values less than 5%.

Table 2: Descriptive Statistics of Board Attributes and Financial Performance of Selected Companies in Nigeria

All-Firms							
	ROA	ROE	BC	BD	BS	CD	FS	LEV
Mean	0.0052	-0.0397	0.4048	0.1753	12.1667	0.5429	9.6069	0.6301
Max.	0.9480	1.8730	1.0000	0.4440	21.0000	2.0000	12.5512	8.3076
Min.	-14.7150	-48.3880	0.0000	0.0000	4.0000	0.0000	7.1402	0.0008
Std. Dev	1.0266	3.3626	0.4920	0.1050	3.4497	0.5088	1.4783	0.6375
Jarque-Bera	357726.8	365789.9	35.1984	4.5797	5.9155	26.0790	15.0014	89100.9
Prob.	0.0000	0.0000	0.0000	0.1013	0.0519	0.0000	0.0006	0.0000

Financial Firms							
	ROA	ROE	BC	BD	BS	CD	FS	LEV
Mean	0.0419	0.1143	0.112245	0.188592	13.97959	0.816327	10.27529	0.693822
Max.	0.4190	0.3270	1.000000	0.400000	21.00000	2.000000	12.55118	8.307577
Min.	-0.0070	-0.0080	0.000000	0.000000	6.000000	0.000000	8.327688	0.000778
Std. Dev	0.0610	0.0913	0.317290	0.112874	3.149144	0.414852	1.088302	0.860581
Jarque-Bera	300.414	6.9643	165.0793	5.151282	2.084207	25.03684	9.287844	15964.05
Prob.	0.0000	0.0307	0.0000	0.076105	0.352712	0.000004	0.009620	0.000000

Non-financial Firms							
	ROA	ROE	BC	BD	BS	CD	FS	LEV
Mean	-0.02692	-0.17446	0.660714	0.163714	10.58036	0.303571	9.022009	0.574264
Max.	0.948000	1.873000	1.000000	0.444000	17.00000	1.000000	11.58016	3.167495
Min.	-14.715	-48.388	0.000000	0.000000	4.000000	0.000000	7.140234	0.038176
Std. Dev	1.406765	4.609093	0.475595	0.096616	2.880936	0.461866	1.529756	0.333783
Jarque-Bera	53460.85	54278.41	19.65792	1.983280	6.486821	21.15364	14.80440	4721.420
Prob.	0.000000	0.000000	0.000054	0.370968	0.039031	0.000026	0.000610	0.000000

Source: Authors' design from the Eviews 12 Output

Similarly, the ROA has a mean value of 4.19% for financial firms. In contrast, the Return on Equity on average is 11.43%, which implies financial firms have a low return on assets compared to return on equity. Considering the components of the board attributes for financial firms, board composition is 11.22% on average, board diversity on average is 18.86%, while board size recorded an average of 14 members and CEO duality with an average value of 0.82 implies that CEO duality is practised majorly in the sampled financial firms. Firm size measured with total assets shows a mean value of N10bn, while the leverage ratio average of 69.38% indicates that larger percentage of the total asset is financed through debt.

For non-financial firms, the average ROA for the sample is -2.69%, and the average ROE is -17.45%. Descriptive statistics of the board attributes for non-financial firms also show some dynamism. Board composition has an average ratio of 66%, implying the dominance of independent board members. In comparison, board diversity has a mean of 16.37% with a standard deviation of 0.09, implying a low participation of women. The board size records an average of 11 members. In contrast, CEO

duality records an average of 0.30, which is approximately 0, suggesting the absence of CEO duality. Firm size shows a mean value of N9bn with a standard deviation of N1.5bn, while leverage ratio shows a mean value of 57.43% with a standard deviation of 0.33, implying that non-financial firms also have above average debt-to-asset ratio. Similar to financial firms, all but board diversity has no normal distribution observable with the p-values of the Jarque-Bera tests, which are less than 10%.

Correlation Analysis

The correlation matrix, presented in Table 3, shows a largely weak and insignificant negative association between the financial performance measures and the indicators of board attributes.

Except for board diversity, which positively correlates with financial performance, all other indicators of board attributes, including board composition, board size, and CEO duality, have negative and weak associations with financial performance for all firms. For financial firms, board diversity and board composition positively correlate with financial performance, while board size and CEO duality have a negative and weak association with financial performance. In the same way, board diversity, board size and CEO duality have a negative and weak correlation with the financial performance of non-financial firms, while board composition has a positive but weak correlation with the financial performance of non-financial firms. While firm size is negatively and weakly correlated with financial performance for non-financial and all firms, leverage ratio is positively correlated with financial and all firms. The matrix also shows a weak but mostly significant association among pairs of the board attributes. The weak correlation between the pairs of the board attributes and financial performance underscores a weak direct link between the issues study.

Table 3: Correlation Matrix

		ROA	ROE	BD	BC	BS	CD	FS
ALL FIRMS	ROE	0.995*						
FINANCIAL		0.445*						
NON-FINANCIAL		0.996*						
ALL FIRMS	BD	0.091	0.074					
FINANCIAL		0.234*	0.289*					
NON-FINANCIAL		-0.053	-0.057					
ALL FIRMS	BC	-0.025	-0.029	0.155*				
FINANCIAL		0.057	-0.011	0.245*				
NON-FINANCIAL		0.154	0.139	0.302*				
ALL FIRMS	BS	-0.055	-0.059	0.041	-0.412*			
FINANCIAL		-0.272*	-0.188	0.165	-0.163			
NON-FINANCIAL		-0.272	-0.188	0.165	-0.163			
ALL FIRMS	CD	-0.092	-0.07	0.033	-0.538*	0.224*		
FINANCIAL		-0.181	0.182	-0.236*	-0.390*	-0.035		
NON-FINANCIAL		-0.158	-0.142	0.157	-0.347*	-0.032		
ALL FIRMS	FS	-0.104	-0.092	0.116	-0.571*	0.319*	0.440*	
FINANCIAL		0.019	-0.282*	-0.081	0.135	-0.366*	-0.145	
NON-FINANCIAL		-0.158	-0.143	-0.270*	-0.685*	0.488*	0.534*	
ALL FIRMS	LEV	0.011	0.00E+00	0.092	-0.145*	0.145*	0.159*	-0.128
FINANCIAL		0.472*	0.279*	0.146	-0.149	0.204*	0.134	-0.387*
NON-FINANCIAL		-0.024	-0.023	-0.068	-0.119	-0.076	0.171	0.039

Source: Authors' compilation from the output of Eviews 12

Cross-Sectional Dependency

Table 4, 5 and 6 present the result of the cross-sectional dependency test. The study checks the cross-sectional dependence in the models.

Table 4: Cross-sectional Dependency for Non-Financial Firms

Residual Cross-Section Dependence Test Null hypothesis: No cross-section dependence in residuals (Pre)						
	ROA			ROE		
Test	Statistic	d.f.	Prob.	Statistic	d.f.	Prob.
Breusch-Pagan LM	49.21963	28	0.0079	53.13111	28	0.0028
Pesaran scaled LM	1.766547		0.0773	2.289241		0.0221
Pesaran CD	-0.007019		0.9944	0.570044		0.5686

Source: Authors' compilation from the output of Eviews 12

The result of the cross-sectional dependency for non-financial firms presented in table 4 shows that the null hypothesis of no cross-sectional dependence is rejected at a 5% significance level, implying the presence of cross-dependence. This conclusion is based on the fact that two out of the three test statistics rejected the null hypothesis of no cross-sectional dependency. Therefore, because of the characteristics of the sample size (T>N), the model for non-financial firms is estimated through the Panel GLS and Panel Corrected Standard Error Estimator (PCSE).

Table 5: Cross-sectional Dependency for Financial Firms

Residual Cross-Section Dependence Test Null hypothesis: No cross-section dependence in residuals (Pre)						
	ROA			ROE		
Test	Statistic	d.f.	Prob.	Statistic	d.f.	Prob.
	22.58239	21	0.3666	36.49358	21	0.0192
Pesaran scaled LM	0.835956		0.4032	1.310587		0.1900
Pesaran CD	1.134252		0.2567	-0.021244		0.9831

Source: Authors' compilation from the output of Eviews 12

The result of the cross-sectional dependency test is presented in Table 5. The result shows that the study fails to reject the null hypothesis of no cross-sectional dependence at a 5% significance level, implying the lack of cross-dependence. This is because all the test statistics except the Breusch-Pagan LM test for the ROE model fail to reject the null hypothesis of no cross-sectional dependency. Therefore, the study employed different panel estimators, such as Pooled OLS, Fixed effect and Random effect estimators for the financial firms.

Table 6: Cross-sectional Dependency for All Firms

Residual Cross-Section Dependence Test Null hypothesis: No cross-section dependence in residuals (Pre)						
	ROA			ROE		
Test	Statistic	d.f.	Prob.	Statistic	d.f.	Prob.
	158.5082	105	0.0006	366.2358	105	0.0092
Pesaran scaled LM	2.657318		0.0079	3.05871		0.0001
Pesaran CD	1.466082		0.1426	-0.1445		0.9831

Source: Authors' compilation from the output of Eviews 12

The result of the cross-sectional dependency for all firms is presented in Table 6. The result shows that the null hypothesis of no cross-sectional dependence is rejected at a 5% significance level, implying the presence of cross-dependence. This conclusion is based on the fact that two out of the three test statistics for both ROA and ROE models rejected the null hypothesis of no cross-sectional dependency. Due to the characteristics of the all-firm sample (N>T), the generalised method of moments is employed to correct the serial correlation in the cross-section. Therefore, the study estimates the models with the GMM to account for the cross-sectional dependence.

Model Estimation

All-Firm Model

Table 7 presents the empirical estimates of the GMM model on the impact of board attributes on return on assets and return on equity. The post-estimation statistics of the result show that the model is valid and accurate. The Arellano-Bond Serial Correlation Test for the ROA and ROE coefficients estimate are free from residual correlation. Also, the Hansen J-statistics of the GMM estimates show that the instruments are valid for both ROA and ROE models.

Table 7: Panel Generalised Method of Moments (GMM) Model For All Firms

	ROA				ROE			
Variable	Coefficient	Std. Error	t-Statistic	Prob.	Coefficient	Std. Error	t-Statistic	Prob.
Dep.(-1)	-0.133	0.037	-3.644	0.000	0.6	0.665	0.901	0.369
BD	-1.024	0.31	-3.298	0.001	-1.464	2.339	-0.626	0.532
BS	0.000	0.011	-0.035	0.972	0.1	0.057	1.754	0.082
CD	-0.39	0.433	-0.902	0.368	-0.71	0.908	-0.782	0.435
FS	-0.249	0.111	-2.249	0.026	-0.254	0.258	-0.984	0.327
LEV	0.031	0.038	0.818	0.415	-0.14	0.148	-0.951	0.343
BC	0.623	0.221	2.813	0.006	2.119	2.11	1.004	0.317
J-statistic		5.684163			J-statistic		5.540296	
Prob(J-statistic)		0.6825			Prob(J-statistic)		0.6986	
Instrument rank		15			Instrument rank		15	
Arellano-Bond Serial Correlation Test								
Test order	m-Statistic	rho	SE(rho)	Prob.	m-Statistic	rho	SE(rho)	Prob.
AR(1)	-0.84	161.491	192.268	0.401	-0.007	-5923.02	826092.8	0.994
AR(2)	-0.234	-29.988	127.929	0.815	0.006	1308.937	237217.1	0.996

Source: Authors' compilation from the output of Eviews 12

The coefficient of the lagged dependent variable for the Return on Assets (ROA) model is negative but statistically significant at a 5% significant level. This suggests an inverse relationship between the past and the present value of return on assets. For every 1% increase in the previous period's ROA, the current year's ROA decreased by 0.133% on average across all firms' categories. The coefficient of board diversity is negative and statistically significant, suggesting that a 1% increase in board diversity decreases return on assets by 1.024%. This implies that an increase in gender diversity on the board decreases the return on assets on aggregate across all firms.

Conversely, an increase in board size increases returns on assets, albeit not statistically significant. Increasing board size generates a non-significant positive impact on return on assets. Meanwhile, CEO duality decreases the return on assets, but it is not significant, implying that the net effect on return on assets is negligible for firms with CEO duality. However, the coefficient of firm size is negative and statistically significant, suggesting that a 1% increase in firm size decreases the overall return on assets for all firms by 0.249%. Elsewhere, leverage and return on assets have a positive but statistically insignificant relationship, suggesting that the leverage structure measured with debt to asset ratio does not impact the overall return on assets. Board composition has a positive and statistically significant effect on return on assets, implying that a good mix of independent directors on the board increases return on assets by 0.623%.

Regarding the impact on Return on Equity (ROE), the coefficient of the lagged dependent variable in the ROE model is positive but statistically insignificant at a 5% level of significance, suggesting that past return on equity has a negligible effect on the current ROE values. The model further reveals that there is a negative and insignificant relationship between board diversity and return on equity. With a coefficient of -1.464 and a p-value of 0.532, the coefficient is statistically insignificant at a 5% level of significance, implying that gender diversity has a negligible impact on return on equity. Board size is observed to positively and significantly impact return on equity. The coefficient of 0.100 indicates that an increase in the number of board members by 1% would exert a 0.1% increase in return on equity. By implication, the larger the board size, the higher the performance of firms measured by return on equity. Conversely, CEO duality has a negative and insignificant effect on return on equity, implying that firms that adopt a CEO duality policy have a lower return on equity, albeit the effect is insignificant. Both firm size and leverage have a negative but negligible effect on return on equity, implying that a 1% increase in firm size declines return on equity by 0.254%, while a 1% increase in leverage decreases return on equity by 0.14%. Similarly, board composition also exerts a positive but insignificant impact on return on equity at a 5% level. By implication, a mix of independent directors on the board tends to increase return on equity insignificantly.

Non-Financial Sector

Table 8 presents the results of the panel regression model for non-financial firms. The diagnosis of the explanatory power of the study shows that the R-squared value of 0.5304 suggests that variation in the independent variables can explain 53.04% of the variation in the return on assets of non-financial firms. For return on equity, the independent variables can explain merely 29.72% of the variation in return on equity. The Durbin-Watson statistics also suggest that both models are free from autocorrelation.

Post-estimation diagnosis of the cross-sectional dependence using Breusch-Pagan LM, Pesaran scaled LM, and Pesaran CD suggest the non-rejection of the null hypotheses of no cross-section dependence in residuals for both the return on assets and return on equity models. This implies that in both models, after employing the Panel GLS and Panel Corrected Standard Error Estimator (PCSE), the coefficients are free from cross-dependency as the estimations are efficient and have corrected for cross-dependence among the variables.

Table 8: Panel GLS Model for Non-Financial Firms

| Variable | ROAA | | | | ROEE | | | |
	Coefficient	Std. Error	t-Statistic	Prob.	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.082	0.174	-0.469	0.64	-0.456	0.537	-0.85	0.398
BC	0.454	0.079	5.716	0.000	0.792	0.289	2.741	0.007
BD	-0.845	0.186	-4.548	0.000	-2.27	0.642	-3.536	0.001
BS	-0.032	0.009	-3.623	0.001	-0.109	0.032	-3.362	0.001
CD	-0.138	0.042	-3.273	0.001	-0.396	0.147	-2.691	0.008
FS	0.055	0.020	2.663	0.009	0.192	0.063	3.057	0.003
LEV	-0.139	0.060	-2.299	0.024	0.056	0.172	0.324	0.747

R-squared		0.530428		R-squared		0.297232
F-statistic		19.76795		F-statistics		7.4015
Prob(F-statistic)		0.0000		Prob(F-statistics)		0.0000
Durbin-Watson stat		1.467779		Durbin-Watson Stat		1.5739

Residual Cross-Section Dependence Test Null hypothesis: No cross-section dependence in residuals (Post)

| Test | ROAA | | | ROEE | | |
	Statistic	d.f.	Prob.	Statistic	d.f.	Prob.
Breusch-Pagan LM	28.56102	28	0.435	22.84911	28	0.7406
Pesaran scaled LM	-0.99408		0.3202	-1.75736		0.0789
Pesaran CD	0.392715		0.6945	-0.14201		0.8871

Source: Authors' compilation from the output of Eviews 12

The coefficient of board composition is positive and statistically significant at a 5% level of significance on return on asset and return on equity, implying that having a mix of independent, executive, and non-executive members on the board improves return on asset and return on equity of non-financial firms. Contrary to expectation, board diversity has a negative and significant impact on both return on assets and return on equity, suggesting that gender diversity on the board contributes adversely to the performance of non-financial firms.

Similarly, the coefficient of board size at -0.032 and -0.109 implies that an increase in the size of board members will decrease the return on assets and return on equity by 0.032% and 0.109%, respectively. CEO duality also exerts a negative and significant impact on both return on assets and return on equity, with a coefficient of -0.138 and -0.396, indicating that CEO duality decreases return on assets by 0.138% and return on equity by 0.396%.

Elsewhere, firm size has a positive and statistically significant effect on both return on assets and return on equity. The coefficient of firm size at 0.055 and 0.192 suggests that increasing firm size increases the performance of non-financial firms by 0.055% and 0.192%, respectively.

Conversely, the coefficient of leverage at -0.139 and 0.056 implies that a 1% increase in debt-toequity ratio decreases return on assets by 0.139% and increases return on equity by 0.056%.

Financial Firms

Before estimating the model to capture the relationship between board characteristics and financial performance (return on assets), the study employs the Redundant test, the Hausman Test, and the Lagrange multiplier to select the most suitable technique. The results are presented in Table 9. With a p-value of 0.0000, the Redundant test suggests that the fixed effect is necessary. A comparison of the random effect and fixed effect using the Breusch-Pagan Lagrange multiplier (LM) suggests that the fixed effect is a more robust estimate. The Hausman test selects the best model between fixed and random effect models, where both models are more significant than the Pooled OLS. The three tests suggest that the fixed effect is a better model to capture the relationship. The R-squared statistics suggest that the variation of the independent variables can explain 62.7% of the variation in return on assets of financial firms.

Table 9: Pooled OLS, Fixed Effect and Random Effect Model for Financial Firms

ROA	POOLED OLS			Fixed effect (one way)			Random Effect		
	COEF	T-STAT	PROB	COEF	T-STAT	PROB	COEF	T-STAT	PROB
BC	-0.01457	-0.8738	0.3845	0.001746	0.1092	0.9133	-0.01457	-1.00511	0.3175
BD	0.09938	2.227257	0.0284	0.064211	1.099362	0.2747	0.09938	2.561958	0.0121
BS	-0.00797	-4.851	0.0000	-0.00429	-2.17151	0.0327	-0.00797	-5.57998	0.0000
CD	-0.03631	-2.8893	0.0048	-0.01535	-1.23943	0.2186	-0.03631	-3.32349	0.0013
FS	0.004683	0.949841	0.3447	-0.0510	-3.78651	0.0003	0.004683	1.092578	0.2775
LEV	0.041331	6.895355	0.0000	0.041575	7.714325	0.0000	0.041331	7.931556	0.0000
R-squared		0.4714			0.626837			0.4714	
F-statistics		13.52569			11.89857			13.52569	
Prob(F-statistics)		0.0000			0.0000			0.0000	
Durbin-Watson Stat		1.391461			1.506247			1.391461	
Redundant Fixed Effect Cross-section F		5.900848	0.0000						
Redundant Fixed Effect Cross-section Chi-Square		34.12463	0.0000						
Correlated Random Effects - Hausman Test Chi-Sq. Statistic						35.405087 (0.0000)			
Lagrange Multiplier Tests for Random Effects Breusch-Pagan								1.372630 (0.2414)	

Source: Authors' compilation from the output of Eviews 12

Thus, using the fixed effect for the ROA model presented in Table 9, the results show that board characteristics measures such as board composition, board diversity, and CEO duality do not significantly impact the return on assets of financial firms at a 5% significance level on the average. Board size has a negative and significant relationship with return on assets for financial firms at a 5% significance level. With a coefficient of -0.00429 and p-value of 0.0327, an increase in board size will exert a negative effect of 0.0043% on return on assets. Firm size and leverage significantly impact financial firms' return on assets. An increase in firm size has a negative but significant impact on return on assets at a 5% significance level. The coefficient is -0.0154 and signifies that an increase in the firm's size by 1% depresses the return on assets by 0.0154%. Similarly, leverage measured by the ratio of debt to capital/equity positively affects the return on assets of financial firms. The coefficient at 0.0416 means that a 1% increase in the debt-to-assets ratio would exert a 0.0416% increase in return on assets of financial firms. This implies that as the companies continue to borrow more, the return on assets of financial firms will be positive as more money is available for productive use.

As a form of robustness check, the Random effect model and Pooled OLS confirmed that the impact of board size is negative and significant on return on assets. Moreover, as against the result of the fixed effect model, board diversity is positive and significant on returns on assets with the pooled OLS and the random effect models. As was obtained in the fixed effect model, the same findings are observed in the Pooled OLS and Random effect models for the impact of leverage on return on assets. Estimates of Pooled OLS and Random effect also show a positive and significant effect on leverage on return on assets of financial firms.

Table 10: Pooled OLS, Fixed Effect and Random Effect Model for Financial Firms

ROE		POOLED OLS					Fixed effect (one way)		Random Effect	
	COEF	T-STAT	PROB	COEF	T-STAT	PROB	COEF	T-STAT	PROB
BC	-0.00787	-0.28193	0.7786	-0.02552	-1.05197	0.2958	-0.00787	-0.358	0.7212
BD	0.285223	3.817332	0.0002	0.174852	1.973547	0.0517	0.285223	4.847328	0.0000
BS	-0.01126	-4.09512	0.0001	-0.00471	-1.57115	0.1199	-0.01126	-5.20007	0.0000
CD	0.038527	1.830624	0.0704	-0.01378	-0.73357	0.4652	0.038527	2.324564	0.0223
FS	-0.02549	-3.08713	0.0027	0.053609	2.62377	0.0103	-0.02549	-3.92011	0.0002
LEV	0.017182	1.711775	0.0903	0.008689	1.062864	0.2909	0.017182	2.173648	0.0323
R-squared		0.3376					0.616293		0.3376	
F-statistics		7.730556					11.37693		7.730556	
Prob(F-statistics)		0.000001					0		0.000001	
Durbin-Watson Stat		1.012867					1.0074		1.012867	
Redundant Fixed Effect Cross-section F		10.28875		0						
Redundant Fixed Effect Cross-section Chi-Square		53.50408		0						
Correlated Random Effects - Hausman Test Chi-Sq. Statistic							61.7325 (0.0000			
Lagrange Multiplier Tests for Random Effects Breusch-Pagan									13.48520 (0.0002)	

Source: Authors' compilation from the output of Eviews 12

The return on equity model for financial firms, presented in Table 10, shows that the redundant fixed effect cross-section statistics of 53.50 and the p-value of 0.000 indicate the rejection of the null hypothesis and accept the alternative that the fixed effect is a better model than the Pooled OLS. Examining the Lagrange multiplier (LM) to determine the better model between the random effect model and OLS shows that with the Breusch-Pagan LM statistics of 13.4852 and the p-value less than 0.0002, the null hypothesis of OLS is also rejected, implying that the random effect model is better than OLS pooled model. The Hausman test results show that the fixed effect is a better and more robust model with a Hausman test of 61.73 and a P-value of 0.0000, which is less than 0.05, suggesting the rejection of the null hypothesis for a random effect.

The fixed effect results for the return on equity (ROE) model presented in Table 10 show that only board diversity and firm size significantly and positively impact the return on equity for financial firms. With an emphasis on the Fixed effect, the result shows that board composition has a negative and insignificant effect on the return on equity, while board size has a positive but insignificant effect on the return on equity. The effect of board diversity is positive and significant on return on equity, suggesting that an increase in gender mix by 1% positively affects return on equity by 0.1748% for financial firms. Meanwhile, an increase in firm size has a positive and significant impact on return on equity at a 5% significance level. The coefficient of firm size at 0.0536 and p-value of 0.0103 signifies that a 1% increase in firm size increases the return on equity by 0.0536%. The coefficient of leverage implies that a 1% increase in leverage will increase return on equity by 0.86%, albeit insignificant.

For robustness check, as against the fixed effect estimator, the pooled OLS and random effect models show that board characteristics like board diversity, board size, CEO duality, firm size, and leverage significantly affect the return on equity of financial firms. The Pooled OLS and the fixed effect model validate the impact of board diversity on return on equity. From the fixed effect model, CEO duality has a negative but insignificant effect on the return on equity of financial firms at a 5% significance level. With a coefficient of -0.0138 and p-value of 0.4652, a CEO duality generates a negligible impact on return on equity. On the contrary, in the pooled OLS and random effect models CEO duality significantly impact ROE.

To further diagnose the explanatory power of the Fixed Effect Model, the R squared value of 0.61 suggests that the model is moderately fitted and the variation of the independent variables for financial firms explains 61% of the variation in the return on equity. The Durbin-Watson statistics, which also fall within the acceptance region, further show that the model is fairly free from autocorrelation.

Discussion

The study has presented a nuanced perspective on the impact of board attributes on firm performance across various categories of firms. The study's findings reveal a mixed outcome on the causal effects of board features on performance indicators across all firms. The presence of a higher number of independent directors on the board positively impacts firm performance. However, the effect is mixed and weak for financial firms but is consistently positive for nonfinancial firms. This finding aligns with previous empirical studies, notably Gambo et al. (2018) and Abidin et al. (2009), which emphasise the positive influence of board composition on firm performance. This suggests that board decisions tend to be more efficient and effective when independent members are on the board. The weak effect of board composition in financial firms corresponds with studies by Mohan and Chandramohan (2018), Shahzad et al. (2015), Buallay et al. (2017), and Dabor et al. (2015), implying that an overabundance of independent directors might lead to inefficiencies. Additionally, as posited by Onakoya et al. (2014), board composition may not be a reliable predictor of performance.

Contrary to expectations and findings by Wellalage and Locke (2013), Holtz and Sarlo (2014), and Ongore et al. (2015), the study indicates that a diverse board tends to hinder the performance of all the selected firms collectively and non-financial firms in particular. In both contexts, increasing the number of women on the board does not significantly improve firm performance in the panel of firms. This finding aligns with the empirical studies by Anis et al. (2017) on board diversity and firm performance. However, for financial firms, board diversity positively impacts performance, suggesting that having more women on the board enhances the firm's performance, especially in the financial sector. This result is consistent with the findings of Ongore et al. (2015), emphasising the positive impact of diversity on performance.

The study also found that firms with larger board sizes tend to perform better, especially when considering all firms collectively. However, lower performance was observed for financial and non-financial firms with larger board sizes. The positive effect of board size on performance aligns with studies by Topal and Dogan (2014), Shahzad et al. (2015), and Onakoya et al. (2014), indicating that a larger board size provides a broader pool of expertise that drives firm performance more effectively than smaller boards dominated by a few executives. The average board size of 12 for all firms, 13 for financial firms, and 10 for non-financial firms is consistent with Amoah (2019) recommendation. Nevertheless, for financial and non-financial firms, a smaller board size may lead to better performance compared to larger boards.

The study's findings regarding CEO duality suggest that a one-tier board structure, where the CEO also serves as the chairman, results in leadership challenges, evidenced by conflicts of interest and agency problems, leading to reduced performance. This is consistent with empirical findings from Shahzad et al. (2015), Mohan and Chandramohan (2018), and Anis et al. (2017), contradicting the findings of Kajola (2008) and Holtz and Sarlo (2014), who found that CEO duality improves firm performance. The lack of significance of CEO duality on performance across all firms aligns with findings from Al-Sahafi et al. (2015). In essence, firm performance tends to suffer when the same individual serves as both the CEO and Chairman of the board. However, in the non-financial sector, the study has shown that having the CEO double as the chairman improves financial performance.

The study suggests that firm size negatively affects the performance of all firms on average, contrary to theoretical expectations. This implies that larger firms, in terms of asset size, do not necessarily guarantee improved performance but may instead weigh down overall performance. However, when considered separately, larger financial and non-financial firms positively influence performance. This is because financial firms, such as banks, predominantly derive earnings from their asset profiles, while non-financial firms with substantial fixed assets tend to leverage economies of scale to enhance performance.

Regarding leverage, as measured by the proportion of total debt to total assets, the study has demonstrated that, for all firms, a substantial debt-to-assets ratio does not guarantee enhanced performance, as the debt may not be effectively utilised for productive purposes. Moreover, significant debt often leads to lower credit ratings and extensive debt repayment, particularly in a high-interest environment. Conversely, the study indicates that financial firms with a high debtto-asset ratio tend to perform better, as debt utilised for productive purposes generates substantial earnings and enhances overall performance. In contrast, for non-financial firms' extensive debt accumulation may hinder their performance. This is attributed to the differing operational models between financial and non-financial firms, resulting in high debt repayment for the latter.

Conclusion and Policy Implications

A persistent gap exists within the existing literature on board attributes as key indicators of corporate governance and their impact on firm performance. Most studies have predominantly focused on firms as a collective entity, with limited research endeavours delving into a more nuanced exploration of the effects, particularly within the subcategories of financial and nonfinancial firms. Consequently, this study investigates the influence of various indicators of board attributes on performance

indicators across all firms, financial firms, and non-financial firms, using a robust and efficient estimation technique to analyse the relationships within each category of firms. The study has provided insight into the influence of the features of members of the board of directors on performance of selected firms.

The causal estimates indicate that the presence of a higher number of women on the board adversely affects the performance of all firms and non-financial firms but positively impacts the performance of financial firms, suggesting that women have comparative advantages in computational and finance-related fields. Furthermore, a large board size enhances the performance of all firms in the aggregate; however, when distinguishing between financial and non-financial firms, a large board size appears redundant and hampers performance in both cases. Despite being weak in some instances, CEO duality, which signifies a one-tier board structure, negatively influences firm performance across all categories of firms, highlighting the superiority of the two-tier corporate leadership in driving performance. Large firm size is associated with decreased overall firm performance but increased performance for non-financial firms. In contrast, large firm size results in increased return on equity and decreased return on assets for financial firms. Additionally, extensive debt financing contributes to increased returns on assets but decreased return on equity for all firms, although the effect is insignificant. For financial institutions, large debt financing enhances their performance, while for non-financial firms, debt financing decreases returns on assets but increases returns on equity.

By implications, the study underscores the critical importance of selecting competent, independent directors to enhance performance, focusing on the quality and expertise of women for board membership rather than merely aiming for board diversification. It also advocates for a moderate board size within the range of 10-13 members to prevent redundancy and ensure efficient decision-making. Given the negative relationship between CEO duality and performance, the study suggests adherence to the Nigerian Code of Conduct on Corporate Governance. There is also an emphasis on the need for firms to enhance the efficiency of their asset turnover through improved inventory management and accelerated receivables collection rather than accumulating redundant assets. It is also more profitable for firms to consider lowering their cost of capital for financing obligations to reduce operational costs associated with high debt and increased interest payments.

The relationship between board attributes and firm performance in emerging economies like Nigeria is more complex and ambiguous than straightforward, and this study has succeeded in shedding light on how the composition of a board of directors can influence performance.

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