

EFFECT OF BOARD ATTRIBUTES ON VALUE OF LISTED NON-FINANCIAL COMPANIES IN NIGERIA

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<https://doi.org/10.37602/IJEBSSR.2026.4203>

ABSTRACT

This study examines the effect of board-specific attributes on the value of listed non-financial firms in Nigeria. It seeks to understand the extent to which board size, board independence, board diligence, and board financial expertise influence value measured by Tobin's Q. The study is motivated by the growing concerns regarding corporate governance practices and firm value dynamics in Nigeria's volatile economic and business environment. The research adopts an ex-post facto design, relying on secondary data from 82 sampled listed non-financial firms spanning 2015–2024. Using panel multiple regression analysis, the study assesses the impact of board attributes on firm value while controlling for firm size. Findings from the study reveal significant insights into board governance mechanisms and their implications for firm value. Board size, board independence and board financial expertise have a significant positive effect on value, reinforcing the importance of board competence in decision-making and strategic oversight. Board diligence, proxied by board meeting frequency, exhibits an insignificant effect on value, the study concludes that Board attributes influence the value of listed non-financial firms in Nigeria. The study recommends that non-financial firms in Nigeria should have at least two members with financial expertise to enhance decision-making and oversight capabilities, and also give priority to having independent directors who can provide unbiased oversight and strategic guidance.

Keywords: Board Attributes, Board Diligence, Board Financial Expertize, Board Independence, Tobin's Q,

1.0 INTRODUCTION

Despite Nigeria's status as one of Africa's largest economies, the value of listed non-financial firm's remains significantly undermined by a combination of macroeconomic instability, weak corporate governance, poor infrastructure, and capital market inefficiencies. External shocks particularly fluctuations in global oil prices exacerbate inflation, exchange rate volatility, and economic uncertainty, which in turn disrupt firms' operational performance and investment decisions. Additionally, inadequate governance practices, unreliable infrastructure, and a capital market plagued by low liquidity and information asymmetry further hinder firm valuation and investor confidence. These challenges highlight a complex environment that distorts the true value of non-financial firms in Nigeria, thus presenting a critical issue for stakeholders and policymakers

Similarly corporate governance practices in Nigeria have been a subject of scrutiny due to issues related to board independence, transparency, accountability, and shareholder protection.

Weak governance structures and inadequate regulatory oversight undermine investor confidence, increase agency conflicts, and negatively impact firm value. Furthermore The Nigerian stock market is characterized by low liquidity, limited trading activity, and significant information asymmetry between market participants (Nwakanma & Omojolaibi, 2020). These market inefficiencies impede price discovery, distort firm valuation, and create opportunities for market manipulation, which may not accurately reflect the intrinsic value of listed non-financial firms (Uwuigbe & Olusanmi, 2012).

Beyond macroeconomic and socio-political concerns, firm-specific financial fundamentals are critical determinants of market value. The financial health and performance of non-financial firms in Nigeria measured by indicators such as profitability, leverage, liquidity, and growth potential play a central role in shaping investor perceptions. Firms with strong fundamentals, effective management, and sustainable growth strategies are more likely to command higher market value than those grappling with financial distress or operational inefficiencies (Ibrahim & Azeez, 2015).

Understanding the role of board attributes in determining value has been a focal point in financial literature. In recent years, the urgency to enhance firm value has intensified as businesses seek not only to survive but also to thrive in a competitive and often unstable environment. There is growing concern about how firms engage with their stakeholders and how corporate governance practices influence shareholder value. Consequently, organizations have become more attentive to issues of value creation, emphasizing strategies that align financial performance with long-term stakeholder interests

Board size represents the number of directors serving on a firm's board. The optimal board size remains a subject of debate in corporate governance literature. Some studies suggest that larger boards may offer a broader range of expertise, diverse perspectives, and enhanced decision-making capabilities (Yermack, 1996). However, larger boards may also face challenges related to coordination, communication inefficiencies, and decision-making delays, potentially impacting firm performance and value (Jensen, 1993).

Board independence refers to the proportion of independent directors on a firm's board, who are not affiliated with the company's management or significant shareholders. Independent directors are expected to provide unbiased oversight, challenge management decisions, and act in the best interests of shareholders, thereby reducing agency conflicts and enhancing firm value (Fama & Jensen, 1983). Empirical evidence suggests a positive relationship between board independence and firm performance, reflecting the importance of effective corporate governance practices (Adams & Ferreira, 2009). On the one hand Board diligence reflects the commitment, engagement, and effort exerted by the board in monitoring and advising the management on strategic and operational matters. Diligent boards are proactive in identifying risks, evaluating opportunities, and making informed decisions that align with the long-term interests of shareholders (Hermalin & Weisbach, 1998). Board diligence can contribute to improved corporate performance, risk management, and value creation, highlighting its significance in corporate governance and firm valuation.

On the other hand Board expertise relates to the skills, knowledge, and experience of the board members in various functional areas, industries, and strategic domains. Boards with diverse

expertise are better equipped to provide strategic guidance, navigate complex business challenges, and capitalize on emerging opportunities, ultimately contributing to higher firm value (Carter et al., 2003). Board expertise enhances the board's effectiveness in overseeing management, evaluating strategic initiatives, and creating shareholder value, underscoring its importance in shaping firm performance and valuation.

Firm size is a crucial determinant of firm value, reflecting the scale of a company's operations, market presence, and resource base (Barney, 1991). Larger firms often benefit from economies of scale, allowing them to reduce production costs and offer competitive prices. Moreover, larger firms tend to have broader market recognition, better access to financing options, and greater resilience to market fluctuations, which can contribute to higher valuations (Gompers, et al 2003).

In Nigeria, the non-financial firms have been among the key leading sectors in the movement toward support for diversification. These companies have since attached a greater prominence to their shareholders wealth maximization and they engage in establishing good partnership with other stakeholders than they were used to in the past. This study is motivated by the need to build on the few empirical studies in Nigeria that investigated the twin concepts of firm-specific attributes and value.

The value of listed non-financial firms in Nigeria is influenced by a myriad of factors, including economic volatility, governance challenges, infrastructure deficiencies, market inefficiencies, currency risks, socio-political instability, and corporate financial health. Despite the significant impact of these factors on firm value, there is a lack of comprehensive research that examines the effect of board-specific attributes on the firm value of listed non-financial firms in Nigeria.

Existing studies such as Setiawanta et al, (2021) focus on individual factors or limited subsets of variables, such as profitability, firm size, or board characteristics, without considering the interrelationships and interactions among these attributes. This fragmented approach to studying firm value in Nigeria may not capture the complex dynamics and synergistic effects that arise from the combined influence of multiple board-specific attributes on value on the one hand, the studies done by Sinebe (2024), Abdulkarin et al., (2020)., found that board size and independence has an insignificant effect on value. On the other hand, the studies of Habeeb (2024), Shaba and Yaaba (2024), Tahir et al. (2023), Emake Nwokeji and Agubata (2022), Abbassi et al. (2021), Yan et al. (2021), Wu et al (2020) Abdul wahab et al. (2017), all documented a significant positive relationship between board specific attributes and value.

To the extent of the literature reviewed, most of the studies conducted in Nigeria are sector-specific on effect of firm specific attributes on firm value of listed firms, the fact that the present study is on board specific attributes and uses the entire non-financial firms makes this study unique and robust compared to previous literature. Also, this study is laced with stakeholders' theory, which makes it unique and different compared with the studies of Emaka Nwokeji and Agubata (2022) and Abdulkarin et al., (2020).

Therefore, the problem addressed by this study is the lack of comprehensive, rigorous, and context-specific research that examines the impact of multiple board-specific attributes, board size, board independence, board diligence, and board expertise, on firm value of listed non-financial firms in Nigeria. This study aims to fill this research gap by providing empirical

insights into the effect of board specific attributes on firm value in Nigeria and contributing to a better understanding of the complex interplay of factors that shape firm value in this unique and dynamic business environment.

The main objective of the study is to examine the effect of board-specific attributes on value of listed non-financial firms in Nigeria. The specific objectives are to:

- i. Analyze the effect of board size on value of listed non-financial firm in Nigeria
- ii. Ascertain the effect of board independence on value of listed non-financial firms in Nigeria.
- iii. Establish the effect of board diligence on value of listed non-financial firms in Nigeria.
- iv. Investigate the effect of board financial expertise on value of listed non-financial firms in Nigeria.

The following hypotheses are formulated in null form to test the objective of the study:

Ho1: Board size has no significant effect on value of listed non-financial firms in Nigeria.

Ho2: Board Independence has no significant effect on value of listed non-financial firms in Nigeria.

Ho3: Board diligence has no significant effect on value of listed non-financial firms in Nigeria.

Ho4: Board financial expertise has no significant effect on value of listed non- financial firms in Nigeria.

2.0 LITERATURE REVIEW

2.1 Tobin's Q

Tobin's Q is a widely used proxy for firm market value relative to the replacement cost of assets, reflecting how the market values a company's assets and growth potential. A higher Tobin's Q indicates that the firm is perceived as creating more value for shareholders, which may result from effective governance mechanisms, including board attributes (Gompers et al., 2003)

2.2.1 Board Size (BSIZE)

Board size refers to the total number of directors on a company's board (Yermack, 1996). It reflects the board's capacity for decision-making, monitoring, and strategic guidance. According to Agency Theory, the size of the board can influence the effectiveness of managerial oversight: larger boards may provide diverse expertise but may face coordination challenges, while smaller boards may be more agile but could lack sufficient monitoring capacity (Yermack, 1996; Jensen & Meckling, 1976).

2.2.2 Board Independence (BIND)

Board independence captures the proportion of directors who are independent and not involved in the day-to-day management of the company (Abbassi et al., 2021) Independent directors are

considered objective monitors of managerial decisions and are less likely to be influenced by executive management. This aligns with Agency Theory, which emphasizes mechanisms to reduce managerial opportunism and protect shareholder interests (Gompers, et al., 2003; Abbassi et al., 2021).

2.2.3 Board Diligence (BDIL)

Board diligence reflects the level of active participation of board members in governance activities, often proxied by the frequency of board meetings held within a financial year (Ozigi et al., 2023). Diligent boards are more effective in monitoring management, reviewing financial reports, and ensuring strategic decisions align with shareholder interests (Vafeas, 1999).

2.2.4 Board Financial Expertise (BFE)

Board financial expertise refers to the presence of directors with professional financial knowledge or qualifications, such as accounting, finance, or auditing credentials (Habeeb, 2024). Directors with financial expertise are better able to evaluate corporate financial statements, assess risk, and provide oversight of complex transactions, which strengthens governance and reduces agency problems (Nwakanma & Omojolaibi, 2020).

2.3 Empirical Review

Habeeb (2024) examined the effect of capital structure and board size on firm value of Consumer Goods Companies in Nigeria. Using regression analysis. The study found that board size positively and significantly impacts firm value, suggesting that larger boards contribute to higher firm valuation. However, the study lacked detailed information on the sample size, sampling technique, and specific period of study, which limits the ability to assess the robustness and generalizability of the findings. The focus on consumer goods companies in Nigeria further restricts the applicability of the results to other sectors or regions.

Sinebe (2024) examined the impact of board composition on firm value of listed non-financial firms in Nigeria, analyzing data from 2013 to 2022. The research focused on 33 non-financial listed firms, employing a purposive sampling technique. Using pooled panel fixed effect models, the study investigated the influence of board size, board meeting frequency, board independence, and board gender diversity on firm value, proxied by Tobin's Q. The findings indicated that board size does not significantly impact Tobin's Q, suggesting that merely increasing board size may not enhance firm value.

Tahir, et al, (2023) researched on the moderating effect of capital adequacy on the relationship between board characteristics and the firm value of listed banks in Pakistan from 2009 to 2021. The study used firm value as a dependent variable, proxied by Tobin's Q, along board independence as one of the measures of board characteristic This study is based on secondary data extracted from the annual report of the firm and panel data estimation techniques were employed for the analysis. The study finding showed that board independence has positive significant effect on firm value of listed Pakistani banks.

Emeka-Nwokeji and Agubata (2022) examined the effect of corporate governance on firm value of Quoted Non-financial Firms in Nigeria. The study analyzed the effects of board size,

board gender diversity, and audit committee size on firm market value. The analysis revealed that board size, board gender diversity, and audit committee size positively and significantly affect firm market value. However, board independence and board remuneration had a significant negative effect on market value. The study suggests that while certain board attributes enhance firm value, Others may detract from it, highlighting the complexity of corporate governance mechanisms.

Shaba and Yaaba (2024) investigated the effect of corporate Boards on firm value, analysing data from 85 firms listed on the Nigerian Stock Exchange between 2004 and 2023. The study employed a cross-sectional research design and applied the Generalized Least Squares (GLS) econometric technique. The findings suggested that board independence boosts the value of Nigerian listed firms, advocating for increased board independence and higher market capitalization to enhance firm value.

Abbassi et al. (2021) explored the influence of board characteristics on the stock market performance of non-financial firms in South Asia. The study covers companies from Pakistan, Sri Lanka, Bangladesh, and India, spanning a ten-year period from 2011 to 2020. The study sampled 180 firms out of a total population of 274 firms. The used employed secondary data from the annual report of the firms and adopted generalized method of moments (GMM) technique of data analysis. The result showed that there is a positive significant relationship between board independence and market value. The result further suggested that companies in South Asia with a greater composition of independent directors tend to experience improved performance in the stock market.

Yan, et al (2021) studied the connection between board size and financial performance of some selected firm in the US S&P 500 from 2013 to 2017. The study purposively selected 372 companies listed on S&P from a total population of the entire firm listed. Firm performance was gauged with Tobin's ratio and the independent variable board size was proxy by the number of directors in the board. The study relied on secondary data and adopted ordinary least square regression method of data estimation. The regression result showed that there is a negative significant relationship between board size and financial performance.

Abdulkarim, et al, (2020) studied the effect of board independence and board size on the market value of listed industrial goods companies in Nigeria from 2010 to 2019. Ex-post factor research design was used and the study purposively sampled 10 firms out of a total population of fifteen (15) companies listed under the Industrial goods sector. The data was collected from annual reports and account of the sampled companies and the ordinary least square, fixed and random effects regression techniques were applied on the panel data collated. The result showed that board independence has negative insignificant effect on the market value of the companies.

Zhang et al., (2022) looked at the relationship between board diligence and firm value in the context of state-owned enterprises (SOEs) in China. The population included SOEs listed on the A-share market from 2010 to 2018. The study used a sample of 218 companies selected through purposive sampling. Board composition and financial data were collected from the annual report of the firm. More so, panel regression was employed in the analysis of the study data. The result revealed a significant positive association between board diligence and firm

value, but this effect was stronger for SOEs in competitive industries compared to those in less competitive ones.

Liu et al. (2020) examined how board diligence, measured by board size and meeting frequency, influences a firm's risk management effectiveness. The population targeted listed A-share companies on the Shanghai Stock Exchange (SSE) and Shenzhen Stock Exchange (SZSE) from 2014 to 2018. The study used a sample of 282 companies chosen through purposive sampling. Data on board composition and financial statements were retrieved from a commercial database and structural equation modeling method of data analysis was employed. The result revealed that larger and more frequent board meetings were associated with stronger risk management practices and suggested that diligent boards might be better equipped to identify and mitigate risks.

Thenmozhi and Sasidharan (2020) investigated the role of board characteristics, including expertise, in firm value within the Indian context between 2013 and 2017. The study focused on the impact of independent directors with relevant skills. The study utilizes a sample of 200 non-financial firms listed on the National Stock Exchange of India from a total population of 286 firms. The data used in the study was obtained from the stock exchange and financial databases and panel regression model was employed. The result revealed that including independent directors with relevant expertise on the board has a positive significant affects firm value.

Abdul Wahab et al. (2017) examine the effect of board characteristics on firm value in Nigerian banks from 2011 to 2015. The population consisted of all listed banks in Nigeria and 14 banks were purposively selected. The study used board size, gender diversity, and ownership structure, alongside expertise as a measure of board characteristic and Tobins q as a proxy for firm value. The secondary data used in the study was extracted from the annual report of banks and fixed-effects regression model was adopted. The study result revealed that higher proportion of independent directors with expertise on the board has a significant effect on firm value.

Also, Wu et al. (2020) investigated the impact of board members' industry experience on firm value in China from 2007 to 2016. The study sampled 2,433 A-share listed companies from the whole A listed firms. The study relied on secondary data and adopted two-stage least squares (2SLS) instrumental variable approach. The result revealed that there is a positive significant relationship between boards containing directors with relevant industry experience and firm value.

2.4 Theoretical Framework

2.4.1 Agency Theory

The study is underpinned by Agency Theory, first propounded by Jensen and Meckling (1976). The theory explains the relationship between principals (shareholders) and agents (managers), highlighting that agents may pursue their own self-interest, which can conflict with the goals of the principals. This divergence gives rise to agency problems and agency costs, which can negatively affect firm value if not properly managed. The main thrust of Agency Theory is that mechanisms of monitoring and control are necessary to ensure that managers act in the best

interests of shareholders. These mechanisms can be formal (e.g., board of directors, audit committees) or contractual (e.g., incentive schemes), and their effectiveness directly influences corporate performance and value. The justification for the use of Agency theory as the most appropriate theory that explains the study is that Agency theory posits that larger boards may enhance monitoring but could also lead to coordination problems; thus, board size affects the efficiency of oversight. Independent directors on the other hand are less likely to be influenced by management, reducing agency conflicts. Board diligence, measured by board meeting frequency, ensures active monitoring and timely corrective action. While directors with financial knowledge are better equipped to evaluate management decisions and safeguard shareholder wealth. By applying Agency Theory, the study rationalizes that effective board attributes mitigate agency problems, align management interests with those of shareholders, and ultimately enhance firm value, as captured by Tobin’s Q. This makes Agency Theory the most appropriate framework for examining the effect of board attributes on firm value

3.0 METHODOLOGY

The study adopted an ex-post facto research design to investigate the effect of board attributes on value of listed non-financial firms in Nigeria. Ex-post facto research is utilized because the data collected for the study are on events that have already occurred which the research does not have control over. The population of the study is drawn from ten (10) sectors of the companies listed on the floor of the Nigerian Exchange Group (NGX) which are Agricultural sector, conglomerates companies, construction companies, consumer companies, Health care companies, ICT companies, Industrial companies, Natural resources, oil and gas companies, and Services. The total non-financial firms are one-hundred and twelve (112) hence; they constitute the population of the study. A sample size of 82 listed firms was selected using purposive sampling technique after applying the following filter (i) any company that has not been listed prior to 2015 and does not exist up to 2024 will not be selected. (ii) any company that does not have complete data set for all the various for the study period is not considered part of the sample. Secondary data was collected from financial statements of the eighty-two (82) listed firms for the period 2015- 2024. The data were analyze using panel multiple regression. This technique was used because it accounts for individual heterogeneity associated with the sampled firms and also to enable the researcher to effectively determine the effect of firm specific attributes on the value of the listed non-financial firms in Nigeria.

Model Specification

The study adapted and modify the model of Abdulkarim, et al, (2020) which is stated as follows:

$$TQ_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 BDIL_{it} + \beta_4 BFE_i + \beta_5 FS_{it} + \epsilon_{it} \dots\dots\dots(i)$$

Where;

- TQ = Tobin’s Q. (measure of firm value)
- BS = Board Size
- BI = Board Independence
- BDIL = Board Diligence
- BFE = Board Financial Expertise

FS = Firm Size
 i = firm
 t = year
 ε = Error term
 β0 = Intercept
 β1 to β5 = Regression Coefficients

Table 1: Variable Definition and measurement

Variable	Variable Measurement	Source	Apriori Expectation
Tobin’s Q (DV)	Market value of total equity / the book value of total assets	Hameed and Tsoho (2020)	
Board size (IV)	Number of directors at the board	Yan, et al (2021)	+
Board Independence (IV)	Proportion of independent non- executive directors to board size	Tahir, et al, (2023)	+
Board diligence (IV)	Number of meetings held by the board a year	Zhang et al., (2022)	+
Board Financial Expertise (IV)	Number of board members with accounting, finance, and economics expertise	Ozigi et al., (2023)	+
Firm size (CV)	Logarithms of Total Assets	Setiawanta et al. (2021)	+

Source: Compiled by the Researcher (2024)

4.0 RESULTS AND DISCUSSION

4.1 Pre diagnostic Test

The results in table 2 and 3 contain the pre diagnostic analysis of the data

Table 2 Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
tq	820	1.516	1.277	0.09	9.29
bs	820	9.160	2.593	4	23
bi	820	0.613	0.175	0.2	0.75
bdil	820	3.985	0.609	1	6
bfe	820	3.051	1.422	0	8
fs	820	9.956	0.768	8.034	11.789

Source: STATA 16 Output Results based on study data.

The descriptive statistics in table 2 above provided in the table offer insights into the variables Tobin's Q (TQ), Board size (BS), Board independence (BI), Board diligence (BDIL), Board financial expertise (BFE), and firm size (FS) for a dataset of 820 observations. The results showed TQ with a mean of 1.516 which indicate that, on average, the market values firms at approximately 1.52 times their book value of assets. The Std. Dev. of 1.277 indicate that there is a significant variability in Tobin's Q across the sample, showing diversity in firm valuation. The minimum value of TQ was 0.09 which suggests that at least one firm has a market value much lower than its book value, which may indicate poor performance, while the Maximum value of 9.29 for TQ indicates that some firms are highly valued by the market, possibly due to exceptional growth prospects or intangible assets.

Similarly table 2 revealed that board size has a mean value of 9.16 which mean that the average board size is 9 members aligning with common governance practices. The Standard. Deviation of 2.59 reveals that a moderate variation exists in board sizes across firms. The minimum and maximum values of board size are 4 and 23 respectively indicating that the smallest board consists of 4 members, which may reflect a more streamlined governance structure, while the largest board has 23 members, which could imply complexity in decision-making or a preference for diverse expertise.

Furthermore board independence has an average value of 0.613 as shown in table 2 which mean that on average, 61.3% of board members are independent, indicating a good level of board independence, which is often associated with better governance. The Standard. Deviation of 0.175 reveal that a moderate variation exists in the proportion of independent directors across firms. The minimum value of board independence is 0.2 which indicate that some firms have only 20% independent directors, which could raise governance concerns, while the maximum 0.75 indicate that some firms have about 75% independent directors on their boards

The results in table 2 also revealed that a mean of 3.99 for board diligence which indicate that on average, boards meet approximately 4 times annually, which is reasonable for typical governance practices. The Standard Deviation 0.609 which shows the deviation in number of meetings is relatively a low suggesting a low variation in the frequency of meetings. The minimum and maximum values of board diligence are 1 and 6 respectively. The minimum value of 1 indicate that some boards meet only once per year, which could suggest limited oversight, while the maximum value of some boards meet 6 times annually, indicating active oversight.

Table 2 also reveal a Mean of 3.051 for Board Financial Expertise which indicate that on average, firms have about 3 financially skilled members on their boards. The Standard Deviation of 1.422 indicate that there is notable variability in financial expertise among board members across firms. The minimum and maximum values of Board Financial Expertise are 0 and 8 respectively suggesting that some boards lack financial expertise, which might hinder effective financial decision-making, while the maximum of 8 suggest that some boards have up to 8 financially skilled members, indicating a strong emphasis on financial oversight.

Finally table 2 showed firm size has a Mean of 9.956 which suggest that the average firm size, measured logarithmically, is nearly 10, which could correspond to large-scale operations. The

standard deviation of 0.768 for firm size indicate Low variability in firm size, suggesting that firms in the sample are relatively similar in scale. The minimum and maximum values of firm size are 8.03 indicating that the smallest firms are significantly smaller than the mean, while the maximum value of 11.789 indicating how large some of firms are compared to the smallest firms.

Table 3 Result of Correlation Matrix of Dependent and Independent Variables

	tq	bs	bi	bdil	bfe	fs
tq	1.0000					
bs	0.0351	1.0000				
bi	0.0979	-0.3935	1.0000			
bdil	0.0171	0.0038	0.0573	1.0000		
bfe	0.0231	0.5329	-0.1231	0.0700	1.0000	
fs	0.1030	0.0621	0.0781	0.0891	0.0166	1.0000

Source: STATA 16 Output Results based on study data

The correlation matrix provides insights into the relationships between the variables TQ, BS, BI, BDIL, BFE, and FS. Correlation values range from -1 to 1, where: 1 indicates a perfect positive correlation, -1 indicates a perfect negative correlation. 0 indicates no linear relationship. Table 3 table also revealed an association of 0.0351, 0.0979, 0.0171, 0.0231 and 0.1030 between TQ, BS BI, BDIL, BFE and FS respectively indicating a very weak positive correlation suggesting that firms with more independent boards might slightly benefit in terms of market valuation, while BFE financial expertise on the board has a negligible impact on market valuation and finally larger firms tend to have slightly higher market valuations.

The table also revealed a negative correlation of (-0.3935): between BS and BI which suggests that larger boards are less independent, possibly due to a tendency to include more executive or non-independent members, while BDIL, BFE and FS has a positive association of 0.0038, 0.5329 and 0.0621 respectively with BS indicating that the frequency of board meetings tend to reduce when the board size is large and that larger boards tend to include more financially skilled members, while larger firms tend to have slightly larger boards.

The results in Table 3 also revealed a weak positive correlation of 0.0573 and 0.0781 between BI and BDIL and BI and FS which suggests that more independent boards meet more frequently. and that that larger firms have more independent boards., the results showed a weak negative correlation of (-0.1231) between BI and BFE indicating that more independent boards tend to have fewer financial experts, possibly reflecting a preference for diversity in skills or backgrounds.

Finally table 3 revealed a weak positive correlation of 0.0700 and 0.0891 between BDIL and BFE and BDIL and FS respectively: which indicates that boards with more financial expertise tend to meet slightly more frequently, and that larger firms may have slightly more diligent

boards. The weak correlations suggest that these variables operate largely independently, with limited direct linear influence.

4.2 Post Diagnostic Test

Table 4 Result of Variance inflation Test

Variable	VIF	1/VIF
bs	1.67	0.6001
bfe	1.42	0.7022
bi	1.22	0.8220
fs	1.03	0.9755
bdil	1.02	0.9833
Mean VIF	1.27	

Source: STATA 16 Output Results based on study data

The Variance Inflation Factor (VIF) results provide an assessment of multicollinearity among the independent variables in a regression model. Multicollinearity occurs when two or more variables are highly correlated, which can distort the estimated coefficients and reduce the interpretability of the model. The Thresholds for Interpretation is that A VIF of 1 indicates no correlation between an independent variable and others. A VIF between 1 and 5 indicates low to moderate multicollinearity, generally considered acceptable. A VIF above 10 suggests high multicollinearity and a potential issue that needs addressing (Baltagi 2010).

The results in table 4 revealed a VIF 1.67, 1.42, 1.22, 1.03 and 1.02 for Board Size (BS), Board Financial Expertise (BFE), Board Independence (BI), Firm Size (FS) and Board Diligence (BDIL) respectively suggesting absence of multicollinearity. All VIF values are well below the critical threshold of 10, with most being close to 1, indicating minimal overlap between the independent variables. The Mean VIF of 1.27 indicate that the average VIF across all variables is well below 5, indicating that multicollinearity is not a concern in this model.

Table 5: Results of Hausman, Heteroskedasticity and Autocorrelation Test

Hausman test		Heteroskedasticity test		Autocorrelation test	
Chibar ²	Prob.> chi ²	Chi ²	Prob.> chi ²	F value	Prob.> chi ²
13.25	0.0212	1.7e+05	0.0000	62.168	0.0000

Source: STATA 16 Output Results based on study data

The result of the Hausman test in table 5 above showed a chi2 value of 13.25 and corresponding probability values of 0.0212 which is less than 0.05 (5%). The study rejects the null hypothesis and accept the alternative hypothesis that the fixed effect regression model is most appropriate for the study. The Modified Wald test for group wise heteroskedasticity in fixed effect

regression model was conducted to test the presence of heteroskedasticity in the model, the results revealed that the p-value is effectively zero 0.000 Since the p-value is less than the conventional significance level (e.g., 0.05), we reject the null hypothesis and conclude that Heteroskedasticity is present in the regression model. This violates one of the assumptions of ordinary least squares (OLS) regression, which can lead to Inefficient coefficient estimates and biased standard errors, making hypothesis tests and confidence intervals unreliable.

This problem of heteroskedasticity was corrected by running a panel corrected standard error regression to correct the heteroskedasticity problem and improve the reliability of the regression model's inferences. From the result in table 5 above TQ (Tobin's q) has an F value of 62.168 and a corresponding probability value of 0.000 which is less than 0.05. The study rejects null hypothesis and accept the alternative hypothesis that there is autocorrelation problems in the model was corrected by running a panel corrected standard error regression.

Table 6 Panel Corrected Standard Error Regression result

	Panel-corrected					
tq	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
bs	0.0680	0.0135	5.04	0.000	0.0416	0.0945
bi	1.1182	0.3109	3.60	0.000	0.5087	1.7277
bdil	0.2550	0.1988	1.28	0.200	0.1346	0.6447
bfe	0.0425	0.0206	2.06	0.039	0.0021	0.0829
fs	0.3325	0.0217	15.31	0.000	0.2899	0.3750
_cons	4.0995	0.7683	5.34	0.000	5.6053	2.5936
Wald chi² (5)				41.83		
Prob > chi²				0.0000		
R-squared				0.4987		

Source: STATA 16 Output Results based on study data

The results in Table 6 showed a Wald chi² (5) of 41.83, and Prob > chi² of 0.0000 which indicate that the overall model is statistically significant, indicating that at least one independent variable significantly affects TQ. The R-squared of 0.4987 revealed that approximately 50% of the variation in the dependent variable (TQ) is explained by the independent variables

The regression result for the sampled listed non-financial companies in Nigeria as presented in table 6 above showed that there is a positive relationship between board size (BS) and Tobin's Q (TQ) as explained by a Coefficient of 0.068, indicating that a one-unit increase in board size is associated with an increase of 0.068 units in TQ, holding other variables constant. Similarly, board independence (BI) of the sampled listed non-financial companies in Nigeria during the study period has a positive relationship with TQ as explained by the coefficient of 1.118. This means that for every unit increase in board independence (BI), TQ increases by 1.118 units

holding other variables constant. Furthermore, the results in Table 6 revealed that there is a positive relationship between board diligence (BDIL) and TQ of the sampled listed non-financial companies in Nigeria during the study period. This is explained by a coefficient value of 0.255. This implies that a one-unit increase in board diligence (e.g., number of meetings) is associated with a 0.255-unit increase in TQ, holding other variables constant. Finally the results in table 6 revealed a positive relationship between board financial expertise and TQ as explained by the of Coefficient 0.043, which suggest that a one-unit increase in the proportion of board members with financial expertise is associated with a 0.043-unit increase in TQ, holding other variables constant

4.3 Discussion of Findings

This study examine the effect of board specific attributes on profitability and firm value of listed non-financial firms in Nigeria. Specifically, this study sought to determine the effect of board size, board independence, board diligence and board financial expertise on financial performance and value of listed non-financial firms in Nigeria. Therefore, the findings of this study is on the basis of formulated hypotheses, models and analysis carried out. The apriori expectations was that board size, board independence, board diligence and board financial expertise should have a positive and significant effect on firm value of listed non-financial firms in Nigeria.

The study found out that at the level of significance of 5% (0.05) board size of the sampled listed non-financial companies during the study period has a positive relationship with firm value (proxy with Tobin's Q) as explained by the coefficient of 0.0680. This means that for every unit increase in board size (BS), firm value increase by 0.0680 unit. The results also revealed that board size of the sampled firms has a significant effect on value of listed non-financial companies in Nigeria. This was shown by a z value of 5.04 and a corresponding p-value of 0.000 which is statistically significant at 5%. As a result, the study rejected the null hypothesis and accepted the alternative hypothesis, resulting in the conclusion that board size has significant effect on firm value of listed non-financial firms in Nigeria. The results are similar to those of Habeeb (2024), Shaba and Yaaba (2024) Emeha Nwokeji and Agubata (2022), Abdulkarim et al (2020), who also found that board size has significant effect on firm value. The results were in direct opposition to those of Sinebe et al (2024), who discovered that board size has no significant effect on firm value.

Secondly the study also found out that at the level of significance of 5% (0.05) board independence of the sampled listed non-financial companies during the study period has a positive relationship with value (proxy with Tobin's Q) as explained by the coefficient of 1.1182. This means that for every unit increase in board independence (BI), firm value increase by 1.1182 unit. The results also revealed that board independence of the sampled firms has a significant effect on firm value of listed non-financial companies in Nigeria. This was shown by a z value of 3.60 and a corresponding p-values of 0.000 which is statistically significant at 5%. As a result, the study rejected the null hypothesis and accepted the alternative hypothesis, resulting in the conclusion that board independence has significant effect on firm value of listed non-financial firms in Nigeria. The results are similar to those of Tahir et al (2023), Abbassi et al (2021), who also found that board independence has significant effect on firm value. The

results were in direct opposition to those of Abdulkarim et al (2020) who discovered that board independence has negative insignificant effect on firm value.

Similarly the study found that board diligence has a positive and insignificant effect on firm value of listed non-financial firms in Nigeria, which is not in tandem with the apriori expectations. From the results it implies that a unit increase in board diligence leads to 0.2550 unit increase in firm value of listed non-financial firms in Nigeria. The findings are in agreement with those of Tahir (2023), who discovered that Board diligence has no significant effect on firm value. The results were in direct opposition to those of Zhang et al (2022) who found that board diligence has a significant effect on firm value.

Finally the study found out that at the level of significance of 5% (0.05) board financial expertise has a positive and significant effect on firm value of listed non-financial firms in Nigeria. The findings is in line with the apriori expectations. The implication of the above findings is that a unit increase in board financial expertize will lead to 0.0425 units increase in firm value. The above findings of this study are in agreement with those of Wu et al (2020), Therenozhi and Sasidharan (2020), Abdul Wahab (2017) who found that board financial expertise has a positive significant effect on firm value. The above findings of the study is in direct opposition to those of Zhang et al (2022) and Abdulkarim et al (2020).

5.0 CONCLUSION AND RECOMMENDATIONS

This study examined the effect of board specific attributes on firm value as measured Tobin's Q (TQ) of listed non-financial firms in Nigeria, using panel data methods. Key variables analyzed included board size (BS), board independence (BI), board diligence (BDIL), and board financial expertise (BFE), while firm size (FS) was used as control variable. The analysis incorporated various diagnostic tests to ensure robustness and reliability of the results. The results of the study revealed that Board size positively and significantly affects firm value suggesting that larger boards contribute to better firm valuation. Secondly the results revealed that Board independence has a positive significant effect on firm valuation, emphasizing the importance of independent directors in enhancing governance and performance. Board diligence though positively associated with firm value, the relationship is not statistically significant, and implying that frequency of board meetings alone may not directly drive firm value. Board financial expertise has a significant positive impact on value this indicates that financially skilled board members enhance firm value.

The significant positive relationship between board size and Tobin's Q suggests that larger boards bring diverse perspectives and expertise, which can lead to better decision-making and strategic oversight. Similarly, the strong impact of board independence on Tobin's Q highlights the value of independent directors in improving accountability and reducing agency conflicts between management and shareholders. The importance of board financial expertise also aligns with the growing recognition that financially skilled directors can better oversee complex financial matters, mitigate risks, and improve resource allocation. The lack of a statistically significant effect of board diligence on Tobin's Q is an interesting finding that warrants further exploration.

Based on the findings discussed above the study recommended the following

- i. Firms should prioritize having independent directors who can provide unbiased oversight and strategic guidance.
- ii. Increase financial expertise: Boards should include members with financial expertise to enhance decision-making and oversight capabilities.
- iii. Optimize board size: While larger boards contribute positively to firm valuation, an excessively large board may lead to inefficiencies. Firms should aim for an optimal board size that balances diversity of expertise and effective decision-making.
- iv. Reevaluate board diligence Firms should assess the quality and effectiveness of board meetings rather than focusing solely on frequency.

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