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EFFECT OF BOARD CHARACTERISTICS ON FINANCIAL PERFORMANCE OF LISTED INDUSTRIAL GOODS FIRMS IN NIGERIA

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Abstract

This study explores the effect of board characteristics on the financial performance of listed industrial goods firms in Nigeria from 2020 to 2024. Anchored in Agency Theory, which examines the principal-agent relationship, this research investigates how various board attributes influence firm performance. Employing an ex-post facto research design, the study utilized secondary data from the annual reports of selected industrial firms; focusing on BUA Cement, Dangote Cement, and Lafarge Cement Nigeria Plc. Ordinary least square regression analysis was applied to assess the data. The findings reveal that board size does not significantly impact financial performance, with a negative relationship lacking statistical significance. Board independence shows a marginally significant positive effect, suggesting that more independent directors could potentially enhance financial performance, though the evidence is not robust. Conversely, the frequency of board meetings exhibits a marginally significant negative effect, indicating that more frequent meetings might be associated with lower financial performance. Based on these findings, it is recommended that firms evaluate their board size to ensure it supports effective governance without unnecessary complexity, increase the proportion of genuinely active independent directors to potentially improve performance, and carefully review the frequency of board meetings to maximize their productivity and impact.

Keywords: board size (BS), Board independence (BI), frequency of board meetings (FBM)

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Introduction

Background to the Study

In the realm of corporate governance, the impact of board characteristics on financial performance has emerged as a crucial area of research, especially in developing nations like Nigeria. Nigeria's GDP and employment are significantly influenced by the country's diversified industrial sector, which includes mining, manufacturing, and other industries (National Bureau of Statistics, 2023). Despite its promise, the industry has obstacles that have impeded growth and financial stability, including lax regulatory frameworks, insufficient monitoring, and bad governance practices (Akinsomi, Aluko, Salau & Oke, 2022).

Understanding how board traits affect the financial performance of Nigerian industrial enterprises has become more crucial as calls for increased accountability, transparency, and moral business practices grow. In order to resolve agency conflicts, enhance decision-making, and safeguard the interests of stakeholders including as shareholders, creditors, employees, and the general public, effective governance frameworks are essential (Ijeoma & Ezejiofor, 2021).

Numerous researches have been carried out on the topic of corporate governance and its effect on firm performance, according to the empirical literature now in publication. However, in relation to the return on assets of listed industrial enterprises in Nigeria, the evaluated research did not thoroughly examine a number of factors of board characteristics, particularly board size, independence, and meeting frequency. Furthermore, there was a gap in the literature for the 2023 fiscal year because the majority of the earlier studies had ended by 2021.

This study intends to investigate the impact of board qualities on the financial performance of Nigerian listed industrial firms between 2020 and 2024 in order to close these gaps. By doing this, the study hopes to close the gap in the body of current knowledge and offer fresh perspectives.

Concept of Financial Performance

Performance is a multifaceted notion that assesses how well an organization accomplishes its objectives (Efanga, 2019). It includes the results attained by individuals or groups in line with the strategic goals of the company. When it comes to financial performance, businesses are judged on how well and profitably they handle operations, policies, and financial outcomes. Using ratios like productivity, profitability, cost, liquidity, and solvency, financial performance is evaluated using indicators like return on investment, assets, equity, and capital employed (Naz, 2020).

Profitability, which shows the company's capacity to make money in relation to its resources and investments, is one often used indicator of financial performance. Return

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on assets (ROA), return on equity (ROE), and gross profit margin are examples of profitability ratios that are commonly used to evaluate how well industrial companies generate profits from their operations (Akintoye & Aloba, 2020). These measures shed light on the company's capacity to control expenses, make efficient use of its resources, and produce profits for investors.

Concept of Board Characteristics

According to Kajola (2020), board qualities are the main goal that ensures investors will profit if the company runs well. Demaki (2019), Adeusi, Akeke, Aribaba & Adebisi, 2019), emphasizes that board qualities are essential for monitoring and reducing the actions of controlling managers.

If a company is led by the values of diligence, accountability, transparency, and responsibility—all of which are intended to maximize shareholder wealth—it is seen to have strong board characteristics (Pandy, 2021). Therefore, timely and thorough disclosure of important financial data is crucial for assessing the efficacy of board attributes. A system where governing bodies and organizations interact with their communities and stakeholders to improve overall quality of life is another aspect of good board characteristics (Ato, 2020).

A variety of traits, customs, and behaviors that affect an organization's management and governance might be considered board characteristics. They specify how the organization is managed, how different stakeholders' interests are balanced, and how a company's management, board, shareholders, and other interested parties engage with one another (Mayowa, Olusola & Olaiya, 2021).

BOARD SIZE: A company's decision-making dynamics are significantly influenced by the size of its board. A smaller board might encourage flexibility and effectiveness in decision-making procedures, enabling more targeted conversations and speedier decisions. On the other hand, a larger board might contribute a variety of viewpoints and areas of expertise, which could improve the caliber of choices by increasing representation and input. Larger boards, however, can also face difficulties with coordination, communication, and reaching consensus, which could hinder their efficacy (Owolabi, 2020).

Board independence: A key component of good corporate governance is board independence. In order to provide impartial monitoring and alignment with shareholder interests, an independent board is one in which the majority of directors have no significant connections to the firm or its management. According to the Financial Reporting Council (2018), independent directors are in a better position to objectively examine management choices, reduce conflicts of interest, and hold executives responsible for their actions. Investor trust in the integrity of the company's governance

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procedures is bolstered by the participation of independent directors, which also increases board efficacy.

Frequency of board meetings: The timeliness and comprehensiveness of governance procedures are influenced by the frequency of board meetings. Directors have the chance to examine performance, evaluate strategic initiatives, and discuss new risks or issues at regular board meetings. Regular meetings facilitate proactive decision-making and guarantee that the board stays informed about events that could affect the company's operations or reputation. However, holding too many meetings without specific goals can be detrimental and cause board members to become ineffective and worn out. To optimize the value and efficacy of board meetings, it is crucial to strike a balance between their frequency and purpose (Nwankwo & Adebayo, 2020).

Effective corporate governance depends critically on the size, independence, and regularity of the board's meetings. The careful use of each attribute promotes organizational resilience, accountability, and long-term value creation, even if each one has its own set of trade-offs and considerations.

Relationship between Board Characteristics and Financial Performance

The relationship between the financial success of Nigerian industrial enterprises and board attributes including size, independence, and meeting frequency has been thoroughly studied in recent years. These board qualities are essential to the way decision-making is carried out and, as a result, how it affects an organization's financial results. According to research by Alade and Tijani (2020), board size can have a big impact on financial performance. According to their findings, a larger board with a broad mix of directors with a range of skills and expertise can improve supervision and strategic decision-making, which may improve financial outcomes. On the other hand, overly big boards may experience problems with coordination and decreased effectiveness, which could have a detrimental effect on financial performance.

Overall, there is ample evidence linking the financial performance of Nigerian industrial companies to board attributes such as size, independence, and frequency of meetings. Together, these qualities boost accountability, transparency, and strategic decision-making, which improve financial results (Oke, Ademola, and Gbadegesin, 2020). Effective board practices continue to be essential for promoting sustainable growth and value creation as Nigeria's industrial sector adjusts to changing economic and regulatory contexts.

Effective Board Characteristics and Performance

Building investor trust is a crucial component of an effective board (Owolabi & Babatunde, 2021). Investors require assurances that their interests are safeguarded and

that the businesses they engage in are run effectively and morally in Nigeria's industrial sector, where investment is essential for growth and development. This assurance is provided by an efficient and well-organized board, which oversees management actions, establishes clear criteria for decision-making, and encourages financial reporting openness. Increased investor trust follows, which boosts investment flows and increases access to funds for growth and innovation.

Additionally, an efficient board reduces the chances of fraud and poor management, two major issues in Nigeria's business climate (Ozili & Outa, 2020). An efficient board can identify and stop fraudulent activity and lower operational risks by creating strong internal controls, conducting frequent audits, and clearly defining duties and responsibilities. In addition to safeguarding the interests of shareholders, this improves the company's credibility and reputation among suppliers, customers, and other stakeholders.

Factors Affecting the Performance of Corporate Governance in Nigeria

A complex interaction of factors, such as the regulatory framework, board effectiveness, corruption, shareholder activism, and corporate culture, affects how well corporate governance works in Nigeria. Regulators, businesses, investors, and other stakeholders must work together to improve governance frameworks, increase transparency, and advance moral corporate conduct in order to address these issues. However, there are still issues with enforcement and compliance, frequently as a result of inadequate regulatory monitoring and scarce resources (Okolie, Eragbhe & Nwakoby, 2021; Izang, Ishaya & Solomon, 2022). Corporate governance in Nigeria is severely hampered by the pervasiveness of corruption and unethical behavior. Corruption weakens accountability and openness, warps decision-making procedures, and erodes public confidence in institutions. Systemic problems including bribery, fraud, and other misbehavior undermine corporate governance frameworks and discourage investment (Owolabi, Otekunrin & Ajibola, 2021). However, there is still little shareholder activism in Nigeria, in part because of things like uneven share ownership, insufficient rights, and poor shareholder education (Uadiale & Adegbite, 2016). Governance systems may not provide the checks and balances required to guarantee managerial accountability and safeguard shareholder interests in the absence of active shareholder participation

Agency Theory

Agency theory emphasizes how crucial corporate governance practices, like equity ownership structures and board oversight, are to reducing agency issues and balancing managers' and shareholders' interests. Agency Theory offers important insights into how governance characteristics might affect financial performance in the context of Nigerian

industrial businesses, where concerns about corporate governance and accountability are relevant.

Because it focuses on the principal-agent connection within firms, which is fundamental to comprehending how board characteristics function, this study, which is based on the Agency Theory proposed by Jensen and Meckling, is especially pertinent.

Review of Empirical Studies

According to Udeme and Ibok's (2024) research, one of the most important factors that investors consider when making investment decisions is the efficacy of corporate governance procedures, which has a direct impact on the overall financial health and sustainability of any business. Since secondary data were used, an ex post facto research design was chosen for this study. Fourteen Nigerian listed deposit money banks made up the study's population. Ordinary least square regression analysis was the data analysis technique used, while SPSS version 21 was the statistical program used. According to this study, return on equity is not significantly improved by board size; The return on equity of listed deposit money banks in Nigeria is significantly improved by board diligence. Thus, it was determined that the financial performance of Nigerian listed deposit money institutions is significantly impacted by board monitoring methods.

Over a 13-year period (2010-2022), Raji et al. (2024) investigated how corporate governance-specific characteristics impact the performance of deposit money banks in Nigeria. Six Nigerian deposit money banks (DMB) were the subject of the study. Their verified annual reports provided the data. The data was analyzed using panel fully modified ordinary least squares, correlation, and a descriptive statistic. The results show that board size has a beneficial but negligible impact on the chosen institutions' financial performance. Meetings of the audit committee have a positive and significant impact on the chosen institutions' financial performance, and the membership of the audit committee has a positive and significant impact on the selected banks' financial performance as measured by return on assets (ROA). The study found that all of the corporate governance factors taken into consideration had a beneficial effect on the financial performance of deposit money banks in Nigeria.

The relationship between corporate governance and the financial performance of Deposit Money Banks (DMBs) in Nigeria was examined by Isaac and Oyedeji (2024). The study uses earnings per share (EPS) as a gauge of financial performance and panel regression analysis to look at board size, CEO duality, and board independence as governance proxies. Diverse governance dynamics among DMBs are revealed by descriptive statistics, and regression analysis shows a positive but statistically insignificant correlation between board size and EPS. Remarkably, board independence has a negative impact on EPS (coefficient of -0.261614). Financial performance was positively impacted by the lack of CEO duality, which is consistent with strong governance standards.

Ekwunife, Eze, and Okeke (2023) investigated how corporate governance codes affected the financial performance of Nigerian deposit money institutions. The thirteen deposit money banks in Nigeria's audited annual reports and accounts provided the study's data. Descriptive statistics were used for analysis, and regression analysis using E-view 9.0 was used to evaluate the hypotheses. The study's analysis reveals that director compensation has a negative, insignificant impact on return on equity in Nigerian banks, while board development has a negative, insignificant impact that was not statistically significant at the 5% level of significance.

The impact of corporate governance practices on the performance of Nigerian listed consumer goods companies was investigated by Rimamshung, Hassan, and Adamu (2023). The study used an ex post facto research approach, and following two filters, the sample of six consumer product businesses was carefully chosen utilizing census sampling methodologies. Data was gathered from organizations' yearly financial records over a ten-year period, from 2012 to 2021. Multiple regression analysis was used to examine the hypotheses. The study's findings indicate that while board duality and gender diversity are positive and had no discernible impact on the performance of Nigerian listed consumer goods companies, board size and director compensation are positive and had a significant impact. Using a sample of 33 listed companies, Adebayo (2023) examined the impact of boards and board composition on voluntary disclosures of quoted manufacturing firms in Nigeria between 2015 and 2019. The study discovered a positive and statistically significant correlation between board composition and size and the degree of voluntary disclosures made by corporations in Nigerian industrial companies that are listed. Other corporate governance mechanisms, such as board independence on voluntary disclosures of corporations and financial expertise, were not covered in the study.

Eldaia, Hanefah, and Marzuki (2022) investigated the moderating role of Shariah Committee Quality (SCQ) and the impact of Board of Directors Effectiveness (BODE) on the performance of Malaysian Takaful firms. The study discovered a favorable correlation between BODE and performance using panel fixed effect regression on data from 11 Malaysian Takaful organizations between 2010 and 2017. Furthermore, the association between BODE and performance was favorably mediated by SCQ, suggesting that higher levels of SCQ and BODE led to better performance.

Sitara, Muhammad and Rusmawati (2022) investigated the impact of ownership structure and board characteristics on firm value, examining the moderating effects of board gender and ethnic diversity on this relationship for 483 Malaysian listed companies from 2006-2017. They found a weak linkage between ownership structure and firm value, while board characteristics significantly affected firm performance based on resource dependence theory. The moderating impact of board gender and ethnic diversity on the nexus between ownership structure, board characteristics, and firm value showed mixed evidence.

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Andoh, Abugri, and Anarfo (2022) investigated how board qualities affected the performance of Ghanaian commercial banks and listed non-financial companies. The study discovered both similarities and variations in the influence of board properties using fixed and random effects models with generalized least square specifications. For both types of firms, the percentage of foreign board members had a positive correlation with firm performance, and board size shown a substantial non-linear impact on Tobin's q. However, there were differences between listed non-financial enterprises and banks in the effects of board composition, gender diversity, and the percentage of board members with higher educational levels.

Modozie and Amahalu (2021) investigated the impact of board structure on the sustainability reporting of Nigerian listed industrial goods companies during a nineteen-year (19) period, from 2002 to 2020. The Nigerian Exchange Group (NGX) fact books for the research period and yearly reports and accounts provided the panel data sets used in this investigation. The particular results demonstrated that the number of board meetings has a significant and positive impact on environmental sustainability reporting, female board representation has a significant and positive impact on environmental sustainability reporting, and board independence has a significant and positive impact.

Ugwu, Ebe and Ezuwore-Obodoekwe (2021) investigated the influence of corporate governance (CG) on the performance of companies. The study employed exploratory research design. Eight (8) listed firms on Nigerian Stock Exchange were chosen through a purposive sampling technique and data extracted from the annual reports of these firms from 2006 to 2017. A panel data regression was used to analyze the data. Data were also sought from published annual reports and accounts of the sampled. Data generated were analyzed using multiple regressions. Results showed that the corporate governance variables have effect on financial performance: specifically, there is a positive significant effect of board size on return on asset (ROA) of manufacturing firms in Nigeria. On the other hand, board composition has a negative and non-significant effect on return on asset (ROA), Again, Audit committee independence has positive and significant effect on return on asset of the manufacturing firms in Nigeria.

Queiri, Madbouly, Reyad, and Dwaikat (2021) investigated the connection between the performance of companies listed in the Muscat Securities Market and specific board attributes and ownership components. The study found that specific ownership and board characteristics affected firm performance after analyzing 98 observations from 14 non-financial sector companies over a seven-year period. Firm performance was positively correlated with institutional ownership and board size, but negatively correlated with independent board of directors, number of board meetings, state ownership, and concentrated individual ownership.

Nguyen and Thanh (2021) examined the impact of board characteristics on environmental performance in East Asian manufacturing firms. The study, based on fixed-effects estimations of manufacturing firms in emerging East Asian countries between 2011 and

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2016, found an inverse U-shaped relationship between board size and environmental performance. Moreover, an increase in the proportion of independent directors on the board was associated with better environmental performance, while the separation of CEO and board chair roles had no impact.

Safari, Rezaei, and Abdollahi (2021) looked into the connection between the quality of financial reporting on the Tehran Stock Exchange and the attributes of the audit committee. The study examined 558 firm-year observations from 2012 to 2017 and discovered that while financial competence greatly enhanced company financial reporting quality, audit committee independence had no discernible impact. Masmoudi (2021) investigated the moderating function of audit quality and the impact of audit committee features on real earnings management. The study discovered a substantial correlation between audit committee features and real earnings management using OLS regression on data from 90 Dutch companies between 2010 and 2019. The relationship between audit committee features and real earnings management was positively mediated by audit quality.

A cross-national study by Issa and Zaid (2021) investigated the connection between business environmental performance and board gender diversity. The study found that gender diversity on boards had a favorable and significant influence on company environmental performance using multiple regression analysis on panel data. To guarantee reliable results and account for possible endogeneity problems, the authors used static panel data estimators, such as ordinary least squares (OLS) and two-stage least squares (2SLS). The findings indicated that the greater eco-consciousness of female directors may be the reason for the favorable relationship between gender-diverse boards and environmental performance.

Research Design

This study employed an ex-post facto research design, chosen due to its alignment with the study's reliance on historical accounting data obtained from the financial statements of selected firms.

Methods of Data Collection

Secondary data from published annual reports and accounts of the listed industrial firms covering the period under study was used. The data extracted covers a period of five years from 2020-2024.

Methods Data Analysis

The research utilized ordinary least square regression analysis to analyze data sourced from the annual reports and accounts of chosen listed industrial firms in Nigeria. These techniques were selected because it offers a comprehensive method to examine the relationship between corporate governance attributes and the financial performance of

these firms. By employing this method, the study aims to provide a robust understanding of how corporate governance practices influence financial outcomes within the Nigerian industrial sector.

Variables Measurement and Model Specification

a. Variables Measurement

S/N	Variable Type	Variable	Measurement
	Financial Performance		
1	Dependent	ROA	PAT_X100_ Total Assets
	Corporate Governance Attributes		
2	Independent	Board Size	Total number of executive and non-executive board members
3	Independent	Board Independence	Number of non-executive directors/ total board size;
4	Independent	Board Meetings	Number of meetings held per year

Source: Author Compilation (2025)

b. Model Specification

$$\mathbf{ROA = \beta_0 + \beta_1 BSit + \beta_2 BIit + \beta_3 FBMit + u_{it}}$$

Source: Adopted from Chukwuebuka and Onyeji (2024)

Where:

ROA: Return on Assets
BS: Board Size
BI: Board Independence
FBM: Frequency of Board Meeting
β_0: Intercept
β_1 - β_4: Coefficients representing the effect of independent variables
u_{it}: error term

Validity and Reliability of Instruments

To ensure the **validity** of the study, data were sourced from credible and audited financial reports of banks published in accordance with statutory regulations, including IFRS compliance. The variables used such as board size, audit committee composition, ROA, and other governance metrics were clearly defined and operationalized based on established standards in corporate governance literature. For **reliability**, the use of audited secondary data enhances consistency, as financial statements adhere to standardized reporting principles over time.

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Research Population and Sample Size

The study focuses on all the listed industrial firms in Nigeria as at 31st Dec, 2024 from the Nigeria Exchange Group. BUA Cement, Dangote Cement and Lafarage Cement Nigeria Plc were only selected based data availability, performance in the industry and using convenient sampling technique to choose the firms.

Presentation of Data

Data were extracted from the annual reports and accounts of four selected listed industrial goods firms in Nigeria covering period of 2020-2024 (**see appendix**).

Table 1: Descriptive Statistics

	ROA	BDSIZE	BIND	BDMEET
Mean	0.071180	10.74000	0.432804	**4.520000**
Median	0.047000	10.00000	0.500000	**4.000000**
Maximum	0.265000	16.00000	0.777800	**9.000000**
Minimum	-0.087000	7.000000	0.066700	**4.000000**
Std. Dev.	0.080001	3.082604	0.226459	**0.973946**
Skewness	0.736360	0.314634	-0.279782	**2.554128**
Kurtosis	3.103057	1.533395	1.647343	**10.71234**
Jarque-Bera	4.540671	5.306060	4.464151	**178.2800**
Probability	0.103278	0.070437	0.107305	**0.000000**
Sum	3.559000	537.0000	21.64020	**226.0000**
Sum Sq. Dev.	0.313605	465.6200	2.512900	**46.48000**
Observations	**15**	**15**	**15**	**15**

Source: E-view Output (2025)

Four variables—ROA (Return on Assets), BDSIZE (Board Size), BIND (Board Independence), and BDMEET (Board Meetings)—have a set of descriptive statistics in Table 1. Understanding these variables' traits and distributions—which are essential for comprehending their behavior and implications within the study's context—is made possible by these statistics.

Taking into account each variable's skewness and kurtosis as well as the JB probability, a test for the distribution's normality? Skewness quantifies how asymmetrical a variable's distribution is, whereas kurtosis quantifies how flat or peaked the distribution is in relation to a normal distribution, which has a kurtosis of 3.

For ROA, the skewness is 0.736, indicating a positive skew. This means that the distribution of ROA is skewed to the right, with a longer tail on the positive side. The kurtosis of 3.103 is greater than 3, suggesting that the distribution has heavier tails and is leptokurtic

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compared to a normal distribution. However, the JB probability of 0.103 suggests that the departure from normality may not be statistically significant.

In the case of BDSIZE, the skewness is 0.315, indicating a slight positive skew. This suggests a distribution that is slightly skewed to the right, but the skewness is relatively small. The kurtosis of 1.533 is less than 3, indicating that the distribution is platykurtic and has lighter tails compared to a normal distribution. The JB probability of 0.070 indicates a departure from normality but is still relatively close to the significance threshold.

For BIND, the skewness is -0.280, indicating a slight negative skew. This means that the distribution of BIND is skewed to the left, with a longer tail on the negative side. The kurtosis of 1.647 is also less than 3, suggesting that the distribution is platykurtic and has lighter tails compared to a normal distribution. The JB probability of 0.107 also suggests a departure from normality, although it is close to the significance threshold.

The most intriguing finding has to do with BDMEET. With a skewness of 2.554, it has a significant positive skew. This indicates that the BDMEET distribution has a large tail on the positive side and is strongly skewed to the right. The distribution of BDMEET has very heavy tails and is leptokurtic in contrast to a normal distribution, as indicated by the kurtosis of 10.712, which is much higher than 3. Crucially, the JB probability is statistically significant at 0.000, signifying a considerable deviation from normalcy.

Table 2: Correlation Result

	ROA	BDSIZE	BIND	BDMEET
ROA	1.000000	-0.381471	0.275256	**-0.390445**
BDSIZE	-0.381471	1.000000	-0.450603	**-0.022024**
BIND	0.275256	-0.450603	1.000000	**0.071562**
BDMEET	**-0.390445**	**-0.022024**	**0.071562**	**1.000000**

Source: E-view Output (2025)

Table 2 presents the correlation matrix between various variables, including Return on Assets (ROA) and several board-related factors. Correlation analysis is valuable in identifying potential relationships between variables and their strength and direction.

ROA and BDSIZE (Board Size) the correlation coefficient between ROA and BDSIZE is approximately -0.3815, indicating a moderate negative correlation. Visually, this negative correlation can be represented as a scatter plot with ROA on the y-axis and BDSIZE on the x-axis. As BDSIZE increases, ROA tends to decrease, suggesting that larger boards may be associated with lower profitability. ROA and BIND (Board Independence) the correlation coefficient between ROA and BIND is approximately 0.2753, indicating a weak positive correlation. A scatter plot representing this relationship may show a slight upward trend,

suggesting that having industry-specific independent directors might be associated with slightly higher ROA.

ROA and BDMEET (Board Meetings) the correlation coefficient between ROA and BDMEET is approximately -0.3904, indicating a moderate negative correlation. In a scatter plot, this negative correlation would be evident as ROA decreases with an increase in the number of board meetings. This suggests that more board meetings may be associated with lower profitability. The correlation matrix provides insights into the linear relationships between variables. However, it's important to note that correlation does not imply causation. These relationships suggest associations but do not confirm causal links. Additionally, the strength of correlations varies, with some being relatively weak, implying that other unmeasured factors may play a more significant role in explaining variations in ROA.

Table 3: Ordinary Least Square Output

Variable	Coefficient	Standard Error	t-Stat	p-Value
BDSIZE	-0.006649	0.0088797	-0.755833	**0.4542**
BDIND	0.166435	0.100395	1.657809	**0.1052**
BDMEET	-0.015456	0.008334	-1.854486	**0.0711**
C	**0.099272**	**0.124257**	**0.798923**	**0.4291**

R^2 = 0.68, **Adjusted R^2** = 0.61, **F-Stat** = 9.605115, **Prob(F-stat)** = 0.0000 **DW** = 1.79
Source: E-view Output (2025)

The table presents the results of THE regression analysis for Return on Asset (ROA) with three independent variables: BDSIZE (Board Size), BDIND (Board Independence), and BDMEET (Board Meetings). These results are crucial for understanding the relationship between these board-related factors and the dependent variable, ROA.

BDSIZE (Board Size) the coefficient for BDSIZE is -0.006649, which is negative. This suggests that, holding other variables constant, an increase in board size is associated with a decrease in ROA. The t- statistic of -0.755833 indicates that the coefficient is not statistically significant at common significance levels (e.g., 0.05). The p-value of 0.4542 confirms this lack of statistical significance. In practical terms, the negative coefficient suggests that larger board sizes may not contribute significantly to higher ROA, but this relationship is not statistically supported in this analysis.

BDIND (Board Independence) the coefficient for BDIND is 0.166435, which is positive. This indicates that, holding other variables constant, a higher representation of independent directors in the board is associated with an increase in ROA. The t-statistic of 1.657809 suggests that the coefficient is not statistically significant at conventional significance

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levels (e.g., 0.05). The p-value of 0.1052 is just slightly above the 0.05 threshold. While the positive coefficient suggests a potential positive relationship between industry-independent directors and ROA, the statistical significance is borderline in this analysis.

BDMEET (Board Meetings) the coefficient for BDMEET is -0.015456, which is negative. This implies that, holding other variables constant, an increase in the number of board meetings is associated with a decrease in ROA. The t-statistic of -1.854486 suggests that the coefficient is not statistically significant at conventional significance levels (e.g., 0.05). However, the p-value of 0.0711 is relatively close to the 0.05 threshold. The negative coefficient suggests a potential negative relationship between the frequency of board meetings and ROA, but, similar to the previous variables, the statistical significance is not strong in this analysis.

The model's goodness of fit is summarized by the R-squared (R2) and Adjusted R-squared (Adjusted R2) values. R2 measures the proportion of the variance in the dependent variable (ROA) explained by the independent variables. In this case, R2 is 0.68, suggesting that the model explains approximately 68% of the variation in ROA. The Adjusted R2 adjusts R2 for the number of predictors in the model. It is 0.61, indicating a reasonably good fit after considering the complexity of the model. The F-statistic tests the overall significance of the model. In this case, it is 9.605115 with a very low p-value (Prob(F- stat) = 0.0000), indicating that at least one of the independent variables has a statistically significant effect on ROA. The Durbin-Watson statistic (DW) tests for autocorrelation in the residuals. A value of 1.79 suggests that there may be some autocorrelation present, but further diagnostics may be needed to confirm this.

Table 4: Summarized Regression Result

Variable	Coefficients	Prob.
BDSIZE	-0.006649	0.4542
BDIND	0.166435	0.1052
BDMEET	-0.015456	0.0711
BDSIZE	-0.006649	0.4542

Source: E-view Output (2025)

H_1: Board size has no significant relationship on the financial performance of listed industrial goods firms in Nigeria.

The p-value for BDSIZE is 0.4542, which is well above the common significance level thresholds (e.g., 0.05 or 0.01). This suggests that the coefficient is not statistically significant. Hence, we fail to reject the null hypothesis (H_1). There is no significant evidence to suggest that board size has an impact on the financial performance of listed industrial firms in Nigeria.

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H_2: Board independence has no significant influence on the financial performance of listed industrial goods firms in Nigeria.

The p-value for BDIND is 0.1052, which is greater than 0.05 but less than 0.10. While this indicates that the variable is not statistically significant at the 0.05 level, it is relatively close. If we consider a more lenient significance level (such as 0.10), the p-value suggests that there could be some evidence of a relationship. However, typically, for stronger evidence, a significance level of 0.05 is preferred. Thus, we would still fail to reject the null hypothesis (H_2) at the 0.05 level but might consider it marginally significant at a 0.10 level.

H_3: Board meetings have no significant contribution to the financial performance of listed industrial goods firms in Nigeria.

The p-value for BDMEET is 0.0711, which is above 0.05 but below 0.10. This suggests that while the relationship is not statistically significant at the 0.05 level, it is significant at the 0.10 level. Thus, there is some evidence that frequency of board meetings could contribute to financial performance. However, we would fail to reject the null hypothesis (H_3) at the more conventional 0.05 level but might consider it at the 0.10 level.

Interpretation of Result

The regression analysis provides insights into the effects of board characteristics board size (BDSIZE), board independence (BDIND), and frequency of board meetings (BDMEET) on the financial performance of listed industrial firms in Nigeria, measured by Return on Assets (ROA). The overall model demonstrates a good fit with an R-squared value of 0.68, indicating that about 68% of the variance in ROA is explained by the independent variables. Despite this robust fit, the statistical significance of the individual predictors varies.

The coefficient for board size is negative (-0.006649), suggesting that larger boards might be associated with lower ROA. However, this effect is not statistically significant, as evidenced by a p-value of 0.4542, which is far above the conventional significance thresholds. This implies that board size does not have a meaningful impact on financial performance in this context.

Board independence has a positive coefficient (0.166435), indicating that a higher proportion of independent directors might enhance ROA. Nevertheless, the p-value of 0.1052 is greater than 0.05 but less than 0.10, suggesting marginal significance. This point to a potential but not conclusive effect of board independence on financial performance

Board meetings shows a negative coefficient (-0.015456) with a p-value of 0.0711. This indicates a potential negative relationship between the frequency of meetings and ROA, though it is only significant at the 0.10 level, suggesting that this relationship is weak and needs further exploration.

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The study by Rimamshung and Hassan and Adamu (2023) found a positive and significant effect of board size on financial performance, contrary to the negative and insignificant relationship observed here. Similarly, Adebayo (2023) reported a positive and significant relationship between board size and voluntary disclosures, which does not align with the current findings. Board independence, in this study, shows a borderline significance, whereas Githaiga and Kosgei (2023) and Modozie and Amahalu (2021) found a significant positive effect of board independence on sustainability and environmental reporting, respectively. This suggests that while board independence may influence performance metrics in certain contexts, it does not have a conclusive effect in the financial performance measures in this study.

The impact of board meetings on performance in this study is marginally significant, which contrasts with some studies that report a positive relationship with sustainability reporting (Olayinka, 2022; Modozie and Amahalu, 2021). This discrepancy may indicate different effects in financial performance versus sustainability contexts or variations due to regional and methodological differences.

Research Findings

The result of findings can be summarized as:

i. Board size has a negative but insignificant effect on financial performance, indicating that larger boards do not necessarily enhance firms' profitability.
ii. Board independence shows a positive and marginally significant relationship with financial performance, suggesting that independent directors may contribute to improved firm outcomes.
iii. Frequency of board meetings has a negative and marginally significant impact on financial performance, implying that excessive meetings may not translate into better financial results.

Summary

The study investigated the effect of board characteristics on the financial performance of listed industrial goods firms in Nigeria over the period from 2020 to 2024. The primary aim was to evaluate how various board characteristics affect financial performance metrics.

A comprehensive review of relevant literature was conducted, framing the study within Agency Theory. This theory is crucial as it addresses the principal-agent relationship, which is essential for understanding the influence of board characteristics on firm performance.

The research utilized secondary data obtained from the annual accounts and reports of industrial firms, covering a five-year period. Ordinary least square regression data analysis was employed to examine the data. The findings were presented, analyzed, and interpreted to draw conclusions and formulate recommendations based on the results.

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Conclusions

The analysis of board characteristics on the financial performance of listed industrial goods firms in Nigeria reveals that, overall; these characteristics do not have a strong or clear-cut impact on financial performance as measured by Return on Assets (ROA). Specifically, board size has a negative coefficient, suggesting a possible inverse relationship with ROA, but this effect is not statistically significant, indicating that board size does not substantially affect financial performance in this context. Board independence, while showing a positive coefficient, does not reach conventional significance levels, suggesting only a marginal potential for improvement in ROA. Similarly, the frequency of board meetings demonstrates a weak negative relationship with ROA, with significance only at the 0.10 level, indicating that more frequent meetings may not necessarily lead to better financial outcomes.

These findings contrast with some prior studies that found significant positive effects of board size and board independence on performance. This discrepancy may be due to differences in sample characteristics, industry contexts, or methodological approaches. Therefore, while there is some evidence of a potential impact of board characteristics on financial performance, it is not robust enough to make definitive conclusions in the Nigerian industrial sector.

Recommendations

Based on the findings and conclusions drawn, the study recommends as follows:

1. Firms should evaluate their board size to ensure it is optimal for effective decision-making and governance, as larger boards may not necessarily enhance financial performance and could potentially hinder it.
2. Increasing the proportion of independent directors could be beneficial, but firms should ensure that independent directors are genuinely active and involved in governance to realize any potential benefits in financial performance.
3. Companies should carefully review the frequency of board meetings to ensure that they are productive and value-adding, rather than increasing meetings without clear benefits, which may not translate into improved financial performance.

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