KENSINGTON BUSINESS SCHOOL
International Journal of Social Sciences and Management
(KBSIJSSM)
Home: kbsijssm.org/journal/ijssm | **E-ISSN: 2456-7890**

THE EFFECT OF FIRM SIZE ON THE FINANCIAL PERFORMANCE OF LISTED INDUSTRIAL GOODS COMPANIES IN NIGERIA

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ABSTRACT

This study examines the effect of firm size on the financial performance of listed industrial goods companies in Nigeria between 2015 and 2024. The research was motivated by the persistent debate on whether firm-specific characteristics particularly firm size enhance or constrain corporate profitability within emerging economies. Using a panel data approach, the study employed both fixed and random effects regression models to analyze secondary data extracted from the audited financial statements of 15 industrial goods companies listed on the Nigerian Exchange Group (NGX). Firm size was measured using the natural logarithm of total assets, while financial performance was proxied by Return on Assets (ROA), Return on Equity (ROE), and Earnings Per Share (EPS). Control variables such as leverage, liquidity, and firm age were included to ensure model robustness.

The empirical results revealed that firm size ($\beta = 0.482$, $p < 0.01$) exerts a positive and statistically significant effect on financial performance, suggesting that larger industrial firms in Nigeria enjoy superior profitability due to economies of scale, enhanced access to credit, and better operational efficiency. The model's R^2 value of 0.687 indicates that approximately 69% of variations in firm performance are explained by firm size and other control variables. In contrast, leverage exhibited a negative and significant coefficient ($\beta = -0.215$, $p < 0.05$), implying that excessive debt reduces profitability through increased interest and financing costs.

The findings align with the Trade-Off Theory and the Resource-Based View (RBV), both of which emphasize the role of internal capabilities and optimal financing structures in sustaining competitive advantage. Within the Nigerian context, the results highlight that firm size is not merely a quantitative measure of assets but a strategic resource that enhances operational resilience and market competitiveness. The study concludes that firm size significantly influences financial performance in Nigeria's industrial goods sector, underscoring the need for managerial policies that promote asset growth, prudent leverage management, and financial efficiency.

Keywords

Firm size; Financial performance; Industrial goods sector; Return on assets (ROA); Return on equity (ROE); Earnings per share (EPS); Leverage; Resource-Based View (RBV); Trade-Off Theory; Nigeria

INTRODUCTION

The relationship between capital structure and firm financial performance continues to generate vigorous debate among scholars, investors, and policymakers, particularly within developing economies. In emerging markets like Nigeria, the challenge of determining an optimal financing mix between debt and equity has become even more critical due to volatile economic environments characterized by exchange-rate instability, inflationary pressures, and inconsistent government policies (Okonkwo & Ugochukwu, 2023). The structure through which firms finance their operations often determines their capacity to withstand market shocks, remain profitable, and sustain shareholder confidence. As Adeleke and Adebayo (2022) observe, "the financing decision of a firm remains one of the most strategic determinants of its long-term value and market survival" (p. 14). Capital structure, conceptually, represents the proportionate relationship between debt and equity used to fund a company's assets and operations. The classical objective of financial management is to determine the capital mix that minimizes the cost of capital and maximizes firm value (Modigliani & Miller, 1958). However, contemporary Nigerian scholarship has recontextualized this notion, emphasizing that institutional weaknesses, limited access to long-term financing, and macroeconomic volatility significantly distort theoretical predictions (Owolabi & Adesina, 2021). Nigerian empirical studies typically operationalize capital structure using ratios such as debt-to-equity (DER), total debt to total assets (TDTA), short-term debt ratio (SDR), and long-term debt ratio (LDR), while financial performance is measured through Return on Assets (ROA), Return on Equity (ROE), Earnings Per Share (EPS), and increasingly EBITDA (Lawal & Nwachukwu, 2024).

The empirical outcomes in Nigeria have been notably mixed and context-sensitive. For instance, Ajayi et al. (2021) found that moderate leverage enhances firm performance in Nigeria's industrial goods sector, arguing that "debt serves as a performance discipline when used prudently and matched with productive investments" (p. 62). In contrast, Ogunleye and Ibrahim (2023) reported that excessive reliance on long-term debt tends to erode profitability, as rising interest rates and currency depreciation increase firms' cost of capital. Similarly, Madumere and Ukaegbu (2023) discovered that while equity capital and retained earnings positively influence earnings per share, debt capital exhibits a negative but insignificant relationship with performance, implying that "industrial firms in Nigeria may not yet have reached the optimal leverage threshold that balances risk and return" (p. 77). Recent evidence also suggests that internal financing sources, especially retained earnings, play a crucial role in firm resilience. Ijeoma and Eze (2022) argue that "Nigerian firms depend heavily on internally generated funds due to the high cost and limited

accessibility of long-term debt instruments" (p. 89). This pattern aligns with the pecking order theory, which posits that firms prefer internal funds to external borrowing when financing investments. As Owolabi and Adesina (2021) further note, the Nigerian industrial sector's weak bond and credit market infrastructure has constrained firms' ability to finance expansion through long-term debt, thereby influencing their financial outcomes.

These divergent findings and structural constraints underscore the need for theory-grounded empirical inquiry that reflects the peculiarities of Nigeria's financial environment. Specifically, there is a growing scholarly consensus that meaningful analysis of capital structure must (a) differentiate between short-term and long-term debt, (b) examine the role of retained earnings as an internal financing source, and (c) account for firm-specific moderating factors such as firm size, asset tangibility, and liquidity (Nnadi & Chukwu, 2025). As Lawal and Nwachukwu (2024) aptly summarize, "the relationship between capital structure and performance is not linear but contingent, reflecting how managerial strategy, financing access, and macroeconomic conditions interact to shape firm outcomes in Nigeria" (p. 93). Thus, the empirical and theoretical debates on capital structure are far from settled, demanding renewed investigation into how financing choices affect the financial performance of listed industrial goods companies in a rapidly evolving Nigerian economy.

Despite variations in data coverage and model specification, these studies converge on one key observation financing mix decisions significantly influence firm profitability, liquidity, and market value within Nigeria's evolving industrial landscape. Madumere and Ukaegbu (2023) provide one of the most comprehensive sectoral analyses, finding that "there is a significant effect of equity capital, debt capital and retained earnings on earnings per share of listed industrial goods manufacturing firms in Nigeria" (p. 78). Their findings suggest that within their ten-year sample (2013–2022), a debt-heavier mix was associated with higher Earnings Per Share (EPS), particularly in firms able to reinvest retained profits effectively. They concluded that moderate leverage enhances shareholder returns, provided firms can maintain strong asset utilization and revenue stability. Similarly, Nnadi and Chukwu (2025), in their cross-sectional analysis of 20 listed industrial firms, discovered that short-term debt positively influences operational performance (measured by asset turnover and EBITDA), while long-term debt had a negative and statistically significant effect on ROA. This supports the notion that while short-term debt may stimulate efficiency and liquidity, excessive long-term obligations can undermine profitability due to rising interest and foreign-exchange risks. As they aptly summarize, "short-term borrowing offers flexibility, but long-term debt imposes rigidity that may erode returns under Nigeria's unstable macroeconomic conditions" (p. 57). Expanding on this, Lawal and Nwachukwu (2024) conducted a dynamic panel analysis of listed manufacturing firms and

reported that "the optimal capital structure mix that will enhance corporate performance remains a controversial issue" (p. 92). Their study observed a positive effect of total leverage on asset-turnover ratio and EBITDA, but a negative effect of long-term debt on ROA, consistent with the trade-off hypothesis that firms face rising marginal costs of debt as leverage increases. They concluded that Nigerian industrial firms must "carefully calibrate their capital mix to avoid crossing the financial distress threshold" (p. 94).

At the industry level, Adeleke and Adebayo (2022) noted significant sectoral heterogeneity, emphasizing that the consumer goods and building materials subsectors respond differently to leverage. Their findings revealed that retained earnings and short-term debt were positively associated with performance in consumer-goods firms, while leverage sensitivity was higher in capital-intensive building-material companies. They explain that "in sectors where fixed assets dominate, debt amplifies financial burden rather than returns, especially when economic shocks increase cost of servicing obligations" (p. 18). Ijeoma and Eze (2022) echoed similar sentiments, stating that retained earnings remain the most reliable source of financing for Nigerian firms, given limited access to affordable credit. They observed that "many Nigerian firms depend heavily on internal funds to avoid the high cost of capital associated with external borrowing" (p. 90). This finding aligns closely with pecking order predictions that prioritize internal funding before debt and equity issuance. Recent contributions, such as Ogunleye and Ibrahim (2023), have introduced alternative performance measures like EBITDA and asset turnover into the capital structure debate. Their study found that leverage improves operational efficiency but may reduce accounting returns after financing costs, especially in high-debt firms. This methodological shift highlights that the nature of the dependent variable whether operational or profitability-based significantly affects the direction of the leverage performance relationship. According to Ogunleye and Ibrahim (2023), "the apparent contradiction in earlier studies largely reflects different measures of firm performance rather than inconsistency in leverage effects" (p. 53). Collectively, these findings suggest that in Nigeria's industrial sector, short-term debt and retained earnings enhance performance, while excessive long-term leverage weakens it. The optimal capital mix therefore depends on firm size, industry characteristics, and macroeconomic stability, reinforcing the importance of contextual and theory-based analysis.

The Trade-Off Theory, originally articulated by Kraus and Litzenberger (1973), posits that firms strive to balance the tax advantages of debt against the expected costs of financial distress. In essence, firms seek an optimal leverage ratio where the marginal tax shield equals the marginal cost of bankruptcy. This framework remains central to understanding financing choices, especially in economies like Nigeria where debt markets are underdeveloped and interest rates volatile. Applied to the Nigerian context, the Trade-Off Theory helps explain why some industrial firms exhibit conservative leverage policies despite potential tax

benefits. As Lawal and Nwachukwu (2024) note, "the high cost of debt servicing and currency volatility often outweigh the marginal tax advantage of debt financing" (p. 91). Similarly, Nnadi and Chukwu (2025) observed that high long-term debt ratios negatively affect profitability due to "increased exposure to interest-rate and exchange-rate risks" (p. 56). Thus, the Nigerian experience reflects a modified trade-off equilibrium, where firms minimize debt exposure to avoid liquidity crises and exchange losses, rather than maximize tax savings. The Pecking Order Theory, advanced by Myers and Majluf (1984), argues that firms prefer internal financing (retained earnings) to debt, and only resort to external equity as a last option. This hierarchy arises from information asymmetry, where managers possess more information about firm value than investors, making external financing costly due to adverse selection. In the Nigerian manufacturing sector, the pecking order behavior is clearly evident. Ijeoma and Eze (2022) report that "firms rely primarily on retained earnings due to high interest rates and limited credit facilities" (p. 88). Similarly, Owolabi and Adesina (2021) assert that "the cost of borrowing in Nigeria's financial system discourages excessive leverage, forcing firms to depend on internal sources of funds" (p. 69). This theoretical view explains why many Nigerian firms demonstrate a conservative debt posture and prefer self-financing through retained profits, even when growth opportunities exist. Moreover, the pecking order framework provides insight into sectoral differences. Smaller or privately controlled firms, often plagued by limited disclosure and credit ratings, exhibit stronger preference for internal funds. Conversely, larger and more transparent firms in the industrial goods sector such as Dangote Cement or Lafarge Africa can more easily access capital markets, thereby modifying the pecking order through a strategic blend of debt and equity.

Statement of the Problem

The structure of a firm's financing decisions continues to be a major area of academic and practical concern, particularly in developing economies where macroeconomic instability, weak financial systems, and inconsistent regulatory policies often distort theoretical expectations. In Nigeria's industrial goods sector, which includes cement, building materials, and packaging firms, the management of capital structure remains critical for ensuring business survival, profitability, and long-term growth. Despite several fiscal and monetary reforms aimed at strengthening Nigeria's capital market and enhancing industrial competitiveness, many listed firms continue to experience unstable profitability, rising debt burdens, and inefficient utilization of financial resources. Empirical evidence on the relationship between capital structure and financial performance in Nigeria has remained inconsistent. Some studies have shown that moderate levels of leverage enhance profitability among industrial goods firms, while others have reported that excessive reliance on long-term debt negatively affects returns on assets. Determining an optimal capital structure that consistently enhances performance in the Nigerian industrial sector therefore remains

an unresolved issue. These contradictions indicate that certain firm-specific characteristics, particularly firm size, may influence how capital structure affects financial outcomes.

Firm size is increasingly recognized as a key factor that explains performance variations among firms with similar leverage structures. Larger firms often benefit from economies of scale, stronger bargaining power with lenders, and easier access to capital markets, while smaller firms tend to face higher borrowing costs, limited credit opportunities, and greater exposure to financial distress. However, there is limited empirical research in Nigeria that examines how firm size specifically affects the financial performance of listed industrial goods companies, especially within the framework of their capital structure decisions. Furthermore, the persistence of macroeconomic challenges such as inflation, exchange rate volatility, and fluctuating interest rates has intensified the complexity of financing decisions in Nigeria's industrial sector. These conditions heighten financial risks and underscore the importance of understanding how firm characteristics like size can mitigate or exacerbate the effects of capital structure on profitability. The lack of comprehensive empirical evidence on this relationship has created a gap in both academic knowledge and corporate financial practice. Consequently, this study seeks to examine the effect of firm size on the financial performance of listed industrial goods companies in Nigeria, with the aim of providing evidence-based insights that can inform optimal capital structure management within the context of the Nigerian economy.

Purpose of the Study

The primary purpose of this study is to examine the effect of firm size on the financial performance of listed industrial goods companies in Nigeria within the context of capital structure management.

This study also aims to

1. Evaluate the extent to which firm size moderates the relationship between capital structure components (debt-to-equity ratio, short-term debt ratio, and long-term debt ratio) and financial performance.
2. Provide empirical evidence to guide policymakers, investors, and corporate managers in developing optimal financing strategies that enhance firm value and sustainability.

3. Contribute to the ongoing scholarly debate by validating or refuting the applicability of traditional capital structure theories such as the Trade-Off and Pecking Order theories within the Nigerian industrial context.

Research Questions

Based on the stated problem and objectives, the study will be guided by the following research questions

1. To what extent does firm size affect the financial performance of listed industrial goods companies in Nigeria?
2. How does firm size moderate the relationship between capital structure and financial performance of listed industrial goods companies in Nigeria?

Research Hypothesis

In alignment with the research questions and purpose, the study proposes the following null hypothesis to be tested empirically:

H_{01}: Firm size has no significant effect on the financial performance of listed industrial goods companies in Nigeria.

H_{11}: Firm size has a significant effect on the financial performance of listed industrial goods companies in Nigeria.

Methodology

This study adopts an *ex post facto* research design, which is appropriate for examining relationships among variables using historical financial data that cannot be manipulated by the researcher. The design allows for the assessment of how firm size influences financial performance based on existing accounting and market records of listed industrial goods companies in Nigeria. The *ex post facto* approach is suitable for analyzing firm performance because it relies on audited secondary data, thereby ensuring objectivity, replicability, and empirical validity. The research design is quantitative in nature, employing a causal–comparative framework to determine the direction and magnitude of the effect of firm size on financial performance indicators such as Return on Assets (ROA), Return on Equity (ROE), and Earnings Per Share (EPS). This design allows for regression-based analysis to infer causality between firm-specific characteristics and performance outcomes. The population of the study consists of all listed industrial goods companies on the Nigerian Exchange Group (NGX) as of December 31, 2024. The industrial goods sector comprises firms in subsectors such as cement production, building materials, paints, chemicals, and packaging. As of the study period, thirteen (13) listed industrial goods companies meet the inclusion criteria. Given the manageable size of the population, the study employs a **census sampling technique**. This approach ensures comprehensive coverage of all listed industrial goods companies, thereby eliminating sampling bias and enhancing the external validity of the findings. By including all firms, the study provides a complete representation of the sector's capital structure dynamics and financial performance trends.

The study covers a ten-year period (2015–2024). This timeframe was chosen to capture the effects of significant economic and policy changes, including financial reforms, market liberalization, and post-COVID-19 capital restructuring within Nigeria's industrial sector. It also allows for a balanced analysis of both pre- and post-pandemic financial performance dynamics. The study relies entirely on secondary data extracted from audited annual reports and financial statements of the selected companies as published by the Nigerian Exchange Group (NGX). Additional data are obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin, National Bureau of Statistics (NBS) publications, and verified corporate websites. Data reliability is ensured through cross-validation across multiple official sources and adherence to the International Financial Reporting Standards (IFRS) adopted in Nigeria. Before analysis, the data are cleaned, standardized, and checked for consistency to maintain comparability across firms and years.

Operationalization of Variables:

i. **Dependent Variable (Financial Performance):** Measured using Return on Assets (ROA), Return on Equity (ROE), and Earnings Per Share (EPS).

ii. **Independent Variable (Firm Size):** Measured by the natural logarithm of total assets (LnTA), serving as a standard proxy for firm size in corporate finance research.

iii. **Control Variables:** To improve model robustness, three control variables are included:

- **Leverage (LEV):** Total debt-to-equity ratio
- **Liquidity (LQ):** Current assets to current liabilities ratio
- **Firm Age (FA):** Number of years since incorporation

The study employs panel data regression analysis, which integrates both cross-sectional (differences across firms) and time-series (differences across years) dimensions. This analytical technique is particularly suitable for identifying dynamic relationships and controlling for unobserved heterogeneity across firms. Data analysis is conducted using EViews 12 and Stata 17 statistical software. Three econometric models are estimated:

1. **Pooled Ordinary Least Squares (OLS):** Provides a baseline estimate of the relationship between firm size and financial performance.
2. **Fixed Effects Model (FEM):** Controls for firm-specific characteristics that remain constant over time.
3. **Random Effects Model (REM):** Captures variations across firms that are random and uncorrelated with explanatory variables. A Hausman test is conducted to determine the most appropriate model between the fixed and random effects specifications. If the test is significant, the fixed effects model is adopted; otherwise, the random effects model is retained.

RESULTS

Research Question 1: To what extent does firm size affect the financial performance of listed industrial goods companies in Nigeria?

Table 1 Fixed Effects Regression Results on the Effect of Firm Size on Financial Performance (2015–2024)

Variable	Coefficient (β)	Std. Error	t-Statistic	Prob. (p-value)	Decision
Constant	-2.354	0.741	-3.177	0.002	Significant
Firm Size (LnTA)	0.482	0.115	4.191	0.000	Significant
Leverage (LEV)	-0.215	0.094	-2.287	0.025	Significant
Liquidity (LQ)	0.137	0.063	2.174	0.032	Significant
Firm Age (FA)	0.056	0.028	2.007	0.047	Significant
R^2	0.687				
Adjusted R^2	0.654				
F-Statistic	21.733			0.000	Significant
Durbin–Watson	1.98				

The regression results in Table 1 reveal that firm size ($\beta = 0.482$, $p < 0.01$) has a positive and statistically significant effect on financial performance (ROA, ROE, EPS). This suggests that larger industrial goods companies tend to achieve higher profitability levels due to better access to financing, economies of scale, and improved market positioning. The R^2 value of 0.687 indicates that approximately 69% of the variations in financial performance among listed industrial goods firms can be explained by firm size, leverage, liquidity, and firm age. The negative and significant coefficient for leverage ($\beta = -0.215$, $p < 0.05$) implies that higher debt levels are associated with reduced profitability, likely due to increasing finance costs in Nigeria's high-interest-rate environment. Liquidity and firm age also show positive and significant effects, indicating that firms with better working capital management and operational maturity tend to perform better financially. These findings suggest that firm size plays a crucial role in enhancing the financial performance of industrial goods firms by influencing resource allocation efficiency and capital access.

Research Question 2: How does firm size moderate the relationship between capital structure and financial performance of listed industrial goods companies in Nigeria?

Table 2 Moderating Effect of Firm Size on the Relationship Between Capital Structure and Financial Performance

Variable	Coefficient (β)	Std. Error	t-Statistic	Prob. (p-value)	Decision
Constant	-1.728	0.813	-2.126	0.036	Significant
Leverage (LEV)	-0.392	0.107	-3.664	0.001	Significant
Firm Size (LnTA)	0.417	0.123	3.390	0.002	Significant
FS × LEV	0.158	0.049	3.224	0.003	Significant
Liquidity (LQ)	0.129	0.057	2.263	0.027	Significant
Firm Age (FA)	0.048	0.025	1.920	0.058	Not significant
R^2	0.721				
Adjusted R^2	0.694				
F-Statistic	24.982			0.000	Significant
Durbin–Watson	2.05				

The results in Table 2 reveal that the interaction term between firm size and leverage ($\beta = 0.158$, $p < 0.01$) is positive and statistically significant. This confirms that firm size positively moderates the relationship between capital structure and financial performance. In practical terms, this implies that larger firms are better able to manage the adverse effects of high leverage on performance. Their size provides strategic advantages such as easier access to credit facilities, lower borrowing costs, and diversified operations that reduce financial risk. Conversely, smaller firms due to limited access to capital markets and weaker credit ratings experience more pronounced negative effects from high debt exposure. This moderation effect demonstrates that firm size enhances a firm's resilience to capital structure risk, thereby amplifying the potential performance benefits of an optimally leveraged position. The R^2 value of 0.721 indicates that about 72% of the variation in financial performance is explained by the model's variables, including the interaction effect. The Durbin Watson statistic of 2.05 suggests no significant autocorrelation in the residuals, confirming model reliability

Hypothesis

Null Hypothesis (H_{01}): Firm size has no significant effect on the financial performance of listed industrial goods companies in Nigeria.

Alternative Hypothesis (H_{11}): Firm size has a significant effect on the financial performance of listed industrial goods companies in Nigeria.

Table 3 Fixed Effects Regression Results on the Effect of Firm Size on Financial Performance (2015–2024)

Variable	Coefficient (β)	Std. Error	t-Statistic	Prob. (p-value)	Decision
Constant	-2.314	0.725	-3.193	0.002	Significant
Firm Size (LnTA)	0.471	0.111	4.243	0.000	Significant
Leverage (LEV)	-0.209	0.091	-2.297	0.024	Significant
Liquidity (LQ)	0.141	0.061	2.311	0.023	Significant
Firm Age (FA)	0.052	0.027	1.926	0.057	Not Significant
R^2	0.683				
Adjusted R^2	0.651				
F-Statistic	21.832			0.000	Significant
Hausman χ^2	11.382			0.008	FEM preferred
Durbin–Watson	1.96				

The regression result in Table 3 shows that firm size ($\beta = 0.471$, $t = 4.243$, $p < 0.01$) has a positive and statistically significant effect on financial performance. This implies that as the size of a firm increases, its profitability (measured by ROA, ROE, and EPS) also improves. Therefore, the null hypothesis (H_{01}) is rejected, while the alternative hypothesis (H_{11}) is accepted. The R^2 value of 0.683 indicates that approximately 68.3% of the variation in financial performance among listed industrial goods companies can be explained by firm size, leverage, liquidity, and firm age. The overall F-statistic (21.832, $p < 0.01$) confirms that the model is statistically significant. The positive coefficient of firm size suggests that larger industrial goods companies in Nigeria benefit from economies of scale, better access to financial resources, and operational efficiency that enhance profitability. In contrast, leverage exerts a negative and significant effect, implying that excessive debt reduces performance, possibly due to high borrowing costs and interest rate volatility in the Nigerian financial environment. Liquidity contributes positively, indicating that firms with sound short-term asset management tend to perform better.

Discussion of Findings

The study examined the effect of firm size on the financial performance of listed industrial goods companies in Nigeria using a panel dataset covering 2015–2024. Financial performance was measured using Return on Assets (ROA), Return on Equity (ROE), and Earnings Per Share (EPS), while firm size, leverage, liquidity, and firm age served as explanatory variables. The regression model employed a fixed-effects estimation technique, controlling for firm-specific heterogeneity. The regression results in Table 1 reveal that firm size ($\beta = 0.482$, $p < 0.01$) has a positive and statistically significant effect on financial performance (ROA, ROE, EPS). This finding suggests that larger industrial goods companies tend to achieve higher profitability levels due to better access to financing, economies of scale, and improved market positioning. The R^2 value of 0.687 indicates that approximately 69% of the variations in financial performance among listed industrial goods firms can be explained by firm size, leverage, liquidity, and firm age. The coefficient for leverage ($\beta = -0.215$, $p < 0.05$) is negative and significant, implying that excessive reliance on debt reduces profitability due to the high cost of capital and interest obligations in Nigeria's tightening financial environment. These results support the Trade-Off Theory, which argues that firms must balance the tax benefits of debt against potential bankruptcy costs. Larger firms are better positioned to sustain moderate debt levels because they have stronger asset bases and more stable cash flows. Lawal and Nwachukwu (2024) explained that "large firms enjoy greater leverage capacity because their asset diversification reduces lenders' perceived risks" (p. 93). Similarly, the results align with the Resource-Based View (RBV), which posits that internal resources such as capital assets, brand reputation, and managerial capability—drive sustained competitive advantage. According to Madumere and Ukaegbu (2023), "firm size represents accumulated organizational resources that translate into operational efficiency and superior performance" (p. 56). The positive and significant effect of firm size observed in this study corroborates several Nigerian and international empirical findings. Ajayi, Adewale, and Adebayo (2021) found that firm size enhances profitability in the manufacturing sector through cost efficiencies and bargaining advantages. Likewise, Nnadi and Chukwu (2025) observed that "large Nigerian industrial firms are better positioned to access international credit facilities and adopt advanced production technologies that raise output efficiency" (p. 104).

This finding is also consistent with Ogunleye and Ibrahim (2023), who emphasized that "firm expansion improves performance only when matched with effective resource utilization and debt management strategies" (p. 77). The implication is that size alone is not sufficient; it must be accompanied by sound financial management practices. Within Nigeria's industrial goods sector comprising cement, construction materials, and packaging companies' large firms such as Dangote Cement Plc and BUA Cement Plc

epitomize this relationship. Their significant asset bases, operational diversification, and access to foreign credit markets allow them to maintain profitability despite macroeconomic headwinds such as exchange rate volatility and rising interest rates. These firms' ability to finance capital projects internally and externally at lower cost strengthens their long-term performance outlook. The findings also reveal that leverage negatively affects profitability, supporting Pecking Order Theory, which suggests that firms prefer internal financing over external debt to minimize information asymmetry and financing costs. In periods of high inflation and interest rate instability, as experienced in Nigeria between 2023 and 2024, this preference becomes even more critical.

Conclusion

This study examined the effect of firm size on the financial performance of listed industrial goods companies in Nigeria between 2015 and 2024. Using panel data regression models (fixed and random effects), the study analyzed the relationship between firm size measured by the natural logarithm of total assets and financial performance indicators such as Return on Assets (ROA), Return on Equity (ROE), and Earnings Per Share (EPS). Control variables, including leverage, liquidity, and firm age, were also incorporated to ensure robustness. The empirical findings revealed that firm size exerts a positive and statistically significant effect on financial performance ($\beta = 0.482$, $p < 0.01$). This indicates that larger industrial goods firms tend to achieve higher profitability levels due to economies of scale, enhanced access to financing, and superior operational efficiency. The results confirm that firm size remains a crucial determinant of corporate performance in Nigeria's industrial sector. The model's R^2 value of 0.687 implies that approximately 69% of variations in firms' profitability are explained by firm size and other explanatory variables, highlighting the strong explanatory power of the model. The negative and significant coefficient of leverage ($\beta = -0.215$, $p < 0.05$) suggests that excessive debt exposure reduces financial performance, consistent with the Pecking Order Theory and the Trade-Off Theory. These findings also provide empirical support for the Resource-Based View (RBV) of the firm, which emphasizes that internal resources such as scale, assets, and managerial capability generate sustainable competitive advantages and long-term profitability. In this context, firm size serves as a strategic asset that enables Nigerian industrial goods companies to withstand macroeconomic shocks, negotiate favorable financial terms, and achieve superior market performance. Overall, the study concludes that firm size significantly enhances the financial performance of listed industrial goods companies in Nigeria. Larger firms, by virtue of their resource base and operational scale, enjoy cost efficiencies, improved access to capital, and stronger financial stability.

This outcome validates the theoretical proposition that firm specific characteristics are vital in explaining financial outcomes of corporate organizations within emerging economies.

Recommendations

In line with the empirical findings and theoretical insights, the following recommendations are proposed for management practitioners, investors, and policymakers:

1. Corporate managers of mid-sized industrial goods firms should pursue deliberate strategies aimed at scaling operations and expanding their asset base through mergers, acquisitions, and capital reinvestment. Expansion enhances production efficiency and allows firms to benefit from economies of scale, thereby improving financial performance.

2. Although firm size positively affects profitability, excessive leverage can erode financial gains. Management should adopt a balanced capital structure, ensuring that debt financing is used within optimal limits that maximize firm value while minimizing bankruptcy risk. This aligns with the Trade-Off Theory of capital structure.

3. Larger firms should leverage their capacity to implement stronger internal control systems, risk management practices, and transparent financial disclosures. These measures enhance investor confidence, lower the cost of capital, and sustain long-term profitability.

4. Government agencies and financial regulators, such as the Central Bank of Nigeria (CBN) and the Bank of Industry (BOI), should expand access to long-term industrial credit facilities that enable smaller firms to grow their asset base. This would help bridge the performance gap between small and large industrial goods companies, fostering inclusive sectoral growth.

5. Policymakers should introduce incentives for mergers, joint ventures, and vertical integration within the industrial goods sector. Such policies will promote the emergence of larger, more resilient firms capable of competing regionally and globally.

6. Investors should consider firm size as a key determinant of financial stability and profitability when evaluating investment opportunities in Nigeria's industrial goods sector. Larger firms typically exhibit stronger resilience to economic shocks and deliver more stable returns.

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