IMPACT OF BOARD QUALITIES ON CAPITAL STRUCTURE OF LISTED CONSUMER GOODS FIRMS IN NIGERIA

Shehu Garba Muhammad
Accounting Department
Yobe State Polytechnic Geidam
muhammadshehugarba@gmail.com

Okoro Anthony Vincent
Accounting Department
Ignatius Ajuru University of Education
Port-Harcourt, Rivers state Nigeria.
anthony.okoro@iaue.edu.ng

Corresponding Author: muhammadshehugarba@gmail.com
DOI: https://doi.org/10.57233/ijamer.v2i2.08

Article History: Received: 1 April 2026 | **Revised:** 17 May 2026 | **Accepted:** 2 Jun 2026 | **Published:** 25 June 2026

How to Cite This Article:
Muhammad, S. G., & Okoro, A. V. (2026). Impact of board qualities on capital structure of listed consumer goods firms in Nigeria. *International Journal of Accounting, Management and Economic Review, 2*(2). https://doi.org/10.57233/ijamer.v2i2.08

Abstract
This study examines how board qualities affect capital structure decisions of listed consumer goods firms in Nigeria. Drawing on agency theory, it investigates the influence of board composition, board meetings, and board size on leverage choices measured by long-term debt to total assets, total debt to total assets, and total debt to total equity. Using panel data from 204 firm-year observations (2010-2023), the study applies random effects regression with firm age and size as controls. The results show that board composition (proportion of independent directors) is positively associated with total debt to total assets but negatively associated with total debt to total equity, suggesting that greater board independence increases leverage measured against assets while decreasing leverage measured against equity. Board meetings and board size show no statistically significant association with any leverage measure. Long-term debt to total assets has no significant relationship with any board variable. Firm age significantly reduces all leverage measures, reflecting organizational inertia and accumulated earnings. Firm size has no significant effect. The study contributes emerging market evidence from Nigeria, where institutional contexts differ from developed economies. Findings suggest that Nigerian consumer goods firms should prioritize board independence over meeting frequency and carefully balance debt composition rather than simply increasing total debt, as the composition of leverage (debt-to-assets vs. debt-to-equity) matters more than absolute debt levels.

Keywords: Board, capital, composition, meetings, size.

1.0 Introduction

Corporate governance mechanisms have become increasingly critical in shaping firm financial decisions, particularly capital structure choices that determine how firms finance their operations and growth. The board of directors, as the apex internal governance mechanism, plays a pivotal role in monitoring managerial behavior and safeguarding shareholder interests, thereby influencing strategic financing decisions. While prior research has examined the determinants of capital structure, the specific role of board qualities in explaining cross-sectional and persistent

differences in leverage levels remains underexplored, especially in emerging markets like Nigeria. Rather than focusing on dynamic adjustment processes, this study adopts a static perspective to investigate how board composition, board meetings, and board size are associated with observed leverage levels over time, using a random effects model that accounts for unobserved firm heterogeneity.

Existing literature on board qualities and capital structure has been predominantly anchored in agency theory, which posits that boards serve as monitoring devices to align managerial interests with those of shareholders. While this theoretical framework has provided valuable insights, it offers limited explanatory power for the nuanced interactions between governance mechanisms and financing decisions in emerging market contexts characterized by concentrated ownership structures, weak legal investor protection, and institutional voidsThe theoretical gap lies in the limited application of agency theory to explain how specific board attributes composition, meetings, and size jointly influence capital structure decisions in an emerging market context like Nigeria, where information asymmetries and shareholder-manager conflicts are pronounced. Furthermore, agency theory primarily focuses on the shareholder-manager conflict while inadequately addressing the shareholder-debt holder agency conflict that is particularly pronounced in leverage decisions.

The existing theoretical framework also fails to adequately capture the dynamic adjustment processes of capital structure, where board qualities may influence not only target leverage levels but also the speed of adjustment toward those targets. Ezeani et al. (2023) emphasized that board characteristics significantly affect both target capital structure and adjustment speeds in developed European markets, yet theoretical developments for emerging markets remain limited. Nguyen et al. (2021) demonstrated that dynamic capital structure models are essential in emerging markets where firms continuously adjust toward target leverage, but their theoretical application to African contexts remains underdeveloped. This study addresses this theoretical gap by employing agency theory as the primary lens while acknowledging the need to contextualize its predictions within Nigeria's unique institutional environment, thereby enriching the theoretical discourse on governance-financing relationships in emerging markets.

Prior empirical studies on board qualities and capital structure have employed diverse methodological approaches with notable limitations. Research in developed markets has extensively utilized dynamic panel data techniques including system Generalized Method of Moments estimators to address endogeneity concerns and examine adjustment dynamics.Afolabi et al. (2025) utilized multiple regression analysis for the ICT sector in Nigeria, yet sector-specific methodological rigor remains underdeveloped for other industries. Additionally, existing studies have often employed broad sector classifications or multi-country samples that mask sector-specific nuances, thereby reducing the precision of estimated relationships. Although dynamic panel methods such as system GMM offer advantages for addressing endogeneity and adjustment dynamics, they require longer time series and suitable instruments not available in this dataset. Accordingly, this study adopts a static random effects specification, and the cited dynamic studies are acknowledged for theoretical context only.

The empirical literature on board qualities and capital structure reveals significant contextual and sectoral gaps that warrant scholarly attention. First, existing studies have predominantly focused on developed markets such as the United Kingdom, France, and Germany (Ezeani et al., 2023),

or examined emerging markets in the Middle East, North Africa, and Asia, with limited attention to Sub-Saharan African economies outside of South Africa. The Nigerian context, despite being Africa's largest economy with a vibrant consumer goods sector, remains underexplored in governance-financing research. Afolabi et al. (2025) examined the ICT sector in Nigeria, finding that board size and independence negatively associate with leverage levels, yet the consumer goods sector with its distinct operational characteristics has received scant empirical attention. Second, the literature exhibits a sector aggregation bias, with most studies examining broad cross-sectoral samples or focusing on financial sectors, manufacturing, or technology firms while neglecting the consumer goods sector that exhibits unique financing characteristics including high working capital intensity, inventory-driven operations, and seasonal cash flow patterns.

Nguyen et al. (2021) examined non-financial firms in Vietnam but did not disaggregate by specific industrial sectors, potentially obscuring sector-specific governance effects. Third, previous research has produced inconsistent findings regarding the directional effects of specific board attributes, with board size, independence, and meeting frequency showing contradictory relationships with leverage across different contexts. Alabdullah et al. (2018) found that larger and more independent boards associate with lower leverage levels in Middle East and North African markets, while Afolabi et al. (2025) reported similar negative associations in Nigeria's ICT sector, yet Ezeani et al. (2023) found that larger and more independent boards facilitate faster adjustment speeds toward optimal leverage in European markets.

These inconsistencies suggest the need for context-specific empirical validation, particularly for Nigeria's consumer goods sector. Fourth, the measurement of capital structure has often been limited to single indicators such as total debt ratios, overlooking the compositional dimensions of leverage that may respond differently to governance mechanisms. Ezeani et al. (2023) examined both target capital structure and adjustment speeds, while Nguyen et al. (2021) analyzed total debt and short-term debt ratios, yet comprehensive multi-dimensional leverage measurement remains uncommon in African research. This study addresses these literature gaps by focusing specifically on listed consumer goods firms in Nigeria, employing multiple capital structure measures, and examining three distinct dimensions of board quality to provide nuanced evidence on governance-financing relationships in an underexplored emerging market context.

In light of these identified gaps, this study examines the impact of board qualities on capital structure decisions of listed consumer goods firms in Nigeria. Specifically, the study investigates how board composition, board meetings, and board size influence leverage choices measured by long-term debt to total assets, total debt to total assets, and total debt to total equity, while controlling for firm age and firm size. By addressing the theoretical, methodological, and literature gaps, this research contributes to a more comprehensive understanding of corporate governance mechanisms in emerging markets and provides evidence-based recommendations for policymakers and practitioners seeking to optimize capital structure decisions through effective board design.

Based on agency theory predictions articulated in Section 2.2, the following directional alternative hypotheses are formulated:

H_{01}: Board composition has no significant association with total debt to total assets or total debt to total equity.

H_{02}: Board meetings have no significant association with any capital structure measure.
H_{03}: Board size has no significant association with any capital structure measure.

2.0 Literature Review

Empirical evidence on the relationship between board characteristics and capital structure remains mixed, revealing important theoretical and contextual contingencies. Alabdullah et al. (2018) examined board features and capital structure in MENA emerging markets (Jordan, Saudi Arabia, and others) using a sample of listed firms from 2008 to 2014. Employing multiple regression analysis with debt ratio as the dependent variable, they found that board size, independence, meetings, and expertise significantly influence leverage choices. However, the generalizability of these findings is constrained by regional institutional idiosyncrasies, including concentrated ownership structures and weaker minority shareholder protections. In contrast, Ezeani et al. (2023) present evidence that challenges the universality of these relationships, suggesting that board effectiveness may vary systematically with legal and regulatory environments. This divergence in findings highlights a critical gap: while some studies report positive associations between board independence and leverage, others find non-significant or negative relationships, often attributed to differences in creditor rights, disclosure requirements, and enforcement mechanisms across jurisdictions. The present study contributes to resolving this inconsistency by focusing on Nigeria an emerging market with distinct governance challenges and explicitly modeling board composition, meetings, and size within a single analytical framework to determine which attributes consistently explain cross-sectional variation in leverage levels.

Also, Afolabi et al. (2025)Board characteristics and capital structure decisions: Evidence from the ICT sector*, the* study was conducted in Nigeria focusing specifically on theInformation and Communication Technology sector, the research aimed to investigate how corporate board characteristics influence capital structure decisions within the Nigerian ICT sector given the sector's rapid growth and unique financing needs in an emerging market context, the dependent variable was capital structure measured by debt ratio while the independent variables included various board characteristics such as board size, board independence, CEO duality, board meetings, board gender diversity, and board financial expertise, the sample comprised ICT sector firms listed on the Nigerian Exchange Group, the study covered the period from 2015 to 2022 capturing the post-recession recovery and digital transformation era in Nigeria, and the data was analyzed using multiple regression analysis techniques including ordinary least squares regression and panel data estimation methods to examine the relationships between board characteristics and capital structure choices.

Moreover, Nguyen et al. (2021)Board characteristics and dynamic capital structure: Evidence from an emerging market, the study was conducted in Vietnam representing one of the fastest-growing emerging economies in Southeast Asia, the research aimed to examine how corporate board characteristics influence the dynamic adjustment of capital structure decisions and the speed at which firms adjust toward their target leverage ratios in an emerging market context characterized by rapid economic development and evolving corporate governance practices, the dependent variable was dynamic capital structure measured by leverage ratios including total debt ratio and short-term debt ratio while analyzing the partial adjustment speed toward target capital structure, and the independent variables included various board characteristics such as

board size, board independence, CEO duality, board meetings, board gender diversity, and foreign board members, the sample comprised non-financial firms listed on the Ho Chi Minh City Stock Exchange and the Hanoi Stock Exchange, the study covered the period from 2010 to 2018 capturing the post-global financial crisis recovery and significant reforms in Vietnamese corporate governance, and the data was analyzed using dynamic panel data estimation techniques including the system Generalized Method of Moments (GMM) estimator to address endogeneity concerns and examine the adjustment dynamics of capital structure while controlling for firm-specific and macroeconomic factors.

A key premise of this study is that the relationship between board qualities and capital structure is likely to be sector-specific. Consumer goods firms in Nigeria possess distinctive operational and financial characteristics that differentiate them from firms in other sectors such as manufacturing, financial services, or oil and gas. First, consumer goods companies typically have higher inventory turnover, shorter operating cycles, and more stable cash flows due to recurring demand for essential products (Ojukwu&Nwankwo, 2020). This cash flow stability may reduce the perceived risk of debt, potentially weakening the monitoring role that independent directors play in constraining leverage. In contrast, firms in cyclical sectors (e.g., construction or commodities) face greater earnings volatility, which may amplify the governance-moderating effect of board independence on leverage (Adebayo &Oluwasanmi, 2021).

Second, consumer goods firms often rely heavily on short-term trade credit and working capital financing rather than long-term debt, which alters the relevance of board oversight on different leverage measures (Eze&Ugwu, 2019). For example, board composition may have a stronger influence on total debt ratios in asset-intensive sectors (e.g., telecoms or manufacturing) than in consumer goods, where intangible brand assets predominate. Third, the regulatory environment for consumer goods in Nigeria covering product safety, pricing, and distribution introduces compliance pressures that may interact with board monitoring differently compared to highly regulated sectors like banking (Okafor&Adeleke, 2022).

Consequently, findings from mixed-sector studies (e.g., Abata et al., 2017; Akingunola et al., 2017) may mask sector-specific dynamics. Focusing exclusively on consumer goods firms allows the present study to control for these idiosyncrasies and provide more precise estimates of board-leverage relationships. This sectoral focus is consistent with recent calls for disaggregated governance research in emerging markets (Nguyen et al., 2021; Ezeani et al., 2023).

Empirical Review

Alabdullah et al. (2018)Board features and capital structure in emerging markets, the study was conducted in emerging markets (specifically focusing on countries in the Middle East and North Africa region including Jordan, Saudi Arabia, and other emerging economies), the research aimed to investigate how corporate board characteristics influence capital structure decisions in emerging market contexts where governance mechanisms may differ from developed markets, the study found that board features significantly influence capital structure decisions with larger boards and more independent boards generally associated with lower leverage levels, while CEO duality was found to positively correlate with debt usage, and these results were attributed to the unique institutional environment of emerging markets where board monitoring effectiveness varies, information asymmetry is higher, and the presence of dominant shareholders influences both board composition and financing decisions differently than in developed markets.

Also, Ezeani et al. (2023)Corporate board and dynamics of capital structure: Evidence from UK, France and Germany, the study was conducted in the United Kingdom, France, and Germany representing three major European economies with distinct corporate governance systems including the Anglo-Saxon market-oriented system in the UK and the continental European bank-oriented systems in France and Germany, the research aimed to examine how corporate board characteristics influence the dynamic adjustment of capital structure decisions and the speed of adjustment toward target leverage ratios in developed European markets with varying institutional environments, the study found that board characteristics significantly affect both the target capital structure and the speed of adjustment toward that target with larger boards and more independent boards generally facilitating faster adjustment speeds toward optimal leverage, while CEO duality was found to slow down the adjustment process, and board gender diversity showed positive effects on capital structure dynamics, and these results were attributed to the varying governance mechanisms across the three countries where stronger board monitoring and independence enhance firms' ability to identify and move toward optimal capital structures more efficiently, while concentrated ownership structures and CEO power in some contexts create inertia in adjustment processes, with the cross-country differences highlighting how institutional factors moderate the relationship between board features and capital structure dynamics.

Moreover, Afolabi et al. (2025)Board characteristics and capital structure decisions: Evidence from the ICT sector, the study was conducted in Nigeria focusing specifically on the Information and Communication Technology sector, the research aimed to investigate how corporate board characteristics influence capital structure decisions within the Nigerian ICT sector given the sector's rapid growth, high capital intensity, and unique financing needs in an emerging market context where access to long-term financing remains challenging, the study found that board characteristics significantly influence capital structure decisions with board size and board independence negatively associated with leverage levels suggesting that larger and more independent boards prefer equity financing over debt to mitigate risk, while CEO duality was found to positively correlate with debt usage indicating that concentrated power leads to higher leverage preferences, and board meetings frequency showed a negative relationship with debt levels implying that active monitoring reduces reliance on external financing, and these results were attributed to the specific nature of the ICT sector which requires substantial research and development investments and faces high business risk, leading boards to adopt more conservative financing approaches when they are more independent and active, while CEO duality creates agency problems where managers prioritize control and growth over financial conservatism, with the Nigerian institutional context of underdeveloped capital markets and high interest rates further explaining why board oversight becomes crucial in determining appropriate capital structure choices for technology firms.

Furthermore, Nguyen et al. (2021)Board characteristics and dynamic capital structure: Evidence from an emerging market, the study was conducted in Vietnam representing one of the fastest-growing emerging economies in Southeast Asia with a transitioning corporate governance framework, the research aimed to examine how corporate board characteristics influence the dynamic adjustment of capital structure decisions and the speed at which firms adjust toward their target leverage ratios in an emerging market context characterized by rapid economic development, evolving corporate governance practices, and underdeveloped capital markets, the study found that board characteristics significantly affect both the target capital structure and the

speed of adjustment toward that target with larger boards and higher board independence associated with lower leverage levels and faster adjustment speeds toward optimal capital structure, while CEO duality was found to slow down the adjustment process and result in higher deviation from target leverage, and foreign board members showed positive effects on capital structure optimization, and these results were attributed to the unique institutional environment of Vietnam where larger and more independent boards provide better monitoring and advisory functions that help firms identify optimal financing mixes more efficiently and reduce information asymmetry with creditors, while CEO duality creates entrenchment problems and reduces board effectiveness in overseeing capital structure decisions, with the presence of foreign board members bringing international expertise and governance standards that facilitate faster convergence toward target leverage in a market where domestic governance practices are still developing and access to long-term debt financing remains limited for many firms.

Theoretical Review

Three major theoretical perspectives inform capital structure decisions: trade-off theory, pecking order theory, and agency theory. Trade-off theory (Modigliani & Miller, 1963; Kraus &Litzenberger, 1973) posits that firms balance the tax benefits of debt against the costs of financial distress, arriving at an optimal leverage target. Pecking order theory (Myers &Majluf, 1984) argues that firms prefer internal financing, then debt, and finally equity due to information asymmetries between managers and external investors. While both theories explain why firms choose certain leverage levels, neither explicitly addresses the role of internal governance mechanisms in shaping those choices.

This study is grounded in agency theory (Jensen &Meckling, 1976), which addresses conflicts arising from the separation of ownership and control. Agency theory complements trade-off and pecking order perspectives by explaining how board governance mechanisms mitigate managerial opportunism in financing decisions. Specifically, agency theory yields three testable predictions for board-leverage relationships in emerging markets like Nigeria, where information asymmetries are pronounced.

Firstly, board composition (proportion of independent directors) is predicted to positively influence total debt to total assets and total debt to total equity. Independent directors enhance monitoring of managerial financing decisions, reducing managerial risk aversion and empire-building tendencies that favor equity over debt. Also, board meetings have an ambiguous theoretical relationship with leverage. Frequent meetings may indicate active monitoring, but may also be reactive to poor performance. No directional prediction is offered. Moreover, board size presents competing predictions: larger boards bring diverse expertise that may improve leverage decisions, but also suffer coordination problems and free-riding that weaken monitoring. This study treats board size as an empirical question without a priori directional expectation.

Long-term debt to total assets is not theoretically expected to respond strongly to board qualities, as long-term debt typically involves tighter covenants and greater external monitoring by institutional lenders, reducing the marginal role of board oversight. For the purpose of this study agency theory will be adopted to align with this study due to its resolution between the agent and servant relationship.

3.0 Methodology

The impact of board qualities on capital structure of listed consumer goods firms in Nigeria, board qualities is measured with board composition (BC), board meetings (BM), board size (BS) while capital structure is measured with long term debt to total asset (LDTA), total debt to total asset (TDTA)and total debt to total equity (TDTE)also firm age and firm size are introduce as control variables,The final sample consists of an unbalanced panel **of** 16 listed consumer goods firms in Nigeria over the period 2010–2023 over a period of 14 years, yielding 204 firm-year observations.

Model Equation

$CSit=f(BCit,BMit,BSit,FAit,FSit)$

Where

$$LDTAit=\alpha 0+\beta_1 BCit+\beta_2 BMit+\beta_3 BSit+\beta_4 FAit+\beta_5 FSit+\varepsilon it \ldots\ldots\ldots\ldots\ldots\ldots\ldots..1$$

$$TDTAit=\alpha 0+\beta_1 BCit+\beta_2 BMit+\beta_3 BSit+\beta_4 FAit+\beta_5 FSit+\varepsilon it \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 2$$

$$TDTEit=\alpha 0+\beta_1 BCit+\beta_2 BMit+\beta_3 BSit+\beta_4 FAit+\beta_5 FSit+\varepsilon it \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3$$

Data Limitations and Omitted Variable Considerations

This study acknowledges the absence of several well-established determinants of capital structure, namely profitability (e.g., return on assets), asset tangibility (e.g., property, plant & equipment divided by total assets), and growth opportunities (e.g., market-to-book ratio or sales growth). These variables are recognized in trade-off and pecking order theories as significant drivers of leverage choices. However, they were excluded from the analysis due to unavailability of consistent and reliable data for the sampled consumer goods firms over the period 2010–2023. Specifically:

Profitability**:** Many firms in the sample reported negative or volatile earnings during the study period, and cross-sectional comparability was undermined by differing accounting treatments for extraordinary items.

Tangibility: Detailed asset breakdowns were not consistently disclosed in annual reports for several firm-year observations, leading to substantial missing data.

Growth Opportunities**:** Market-to-book ratios could not be computed for firms with negative book equity or missing share price data. Additionally, sales growth was distorted by inflation and currency devaluation episodes in Nigeria.

The omission of these variables introduces potential omitted variable bias, meaning that the estimated coefficients for board qualities (board composition, meetings, size) may capture effects that are partly attributable to profitability, tangibility, or growth opportunities. Consequently, the results should be interpreted as association**s** rather than causal effects, and they are conditional on the included control variables (firm age and size). Future research with more comprehensive data should re-examine these relationships by incorporating profitability, tangibility, and growth opportunities as additional controls, ideally using dynamic panel estimators to address endogeneity.

4.0 Data Analysis

Table 1:

Descriptive Statistics

After data cleaning, 4 firm-year observations with negative shareholders' equity were excluded from the analysis, resulting in a final sample of 204 observations. The corrected descriptive statistics are presented in Table 1 below

Variables	OBS	Mean	Std. Dev.	Min.	Max.	Skewness	Kurtosis
BS	204	9.975962	2.483647	5	15	0.0216	0.0010
BM	204	4.682692	.980628	3	9	0.0000	0.0000
BC	204	0.5929	0.1853	0.1667	0.9091	-2.21744	8.986695
TDTE	204	0.1803	0.1375	-0.1139	0.7676	1.038844	2.833127
LTDA	204	0.1222	0.1130	0.0005	0.6806	-0.0578008	2.039206
FS	204	10.6908	0.6330	9.0868	11.8645	1.111083	2.647454
FA	204	51.625	11.6692	5	100	0.8637167	4.950522

Source: Survey, 2026.

The board size variable shows a mean of 9.98 directors with a standard deviation of 2.48, indicating that listed consumer goods firms in Nigeria typically have boards comprising approximately 10 members, with moderate variation around this average. The minimum board size is 5 directors while the maximum is 15 directors, suggesting compliance with regulatory requirements for minimum board composition and reasonable upper limits to maintain effectiveness. The skewness value of 0.0216 indicates an almost perfectly symmetrical distribution, meaning board sizes are evenly distributed around the mean without significant clustering toward smaller or larger boards. The kurtosis value of 0.0010 suggests a platykurtic distribution with flatter tails than a normal distribution, implying fewer extreme values in board sizes across the sample firms.

Board meetings average 4.68 times per year with a standard deviation of 0.98, indicating that boards meet approximately 4 to 5 times annually with relatively low variability across firms. The minimum of 3 meetings and maximum of 9 meetings show that while most firms adhere to standard quarterly meeting schedules, some boards meet more frequently possibly due to strategic needs or governance requirements. The skewness of 0.0000 indicates a perfectly symmetrical distribution around the mean, while the kurtosis of 0.0000 suggests a mesokurtic distribution similar to normal distribution, indicating that extreme frequencies of board meetings are rare in the sample.

Board composition, measured as the proportion of non-executive directors, has a mean of 0.5929 or approximately 59.29% with a standard deviation of 0.1853, indicating that on average non-executive directors constitute about 60% of board membership with moderate dispersion. The minimum value of 0.1667 suggests some firms have as low as 17% independent directors, while the maximum of 0.9091 indicates some boards achieve over 90% independence. The negative skewness of -2.21744 reveals a left-skewed distribution with a long tail toward lower independence levels, meaning more firms cluster around higher independence ratios but some firms significantly lag in board independence. The high kurtosis of 8.986695 indicates a leptokurtic distribution with heavy tails, suggesting the presence of outliers where board

composition varies substantially from the norm, potentially reflecting different corporate governance practices or ownership structures across firms.

Total Debt to Total Equity (TDTE**).** The TDTE ratio shows a mean of 0.1803 with a standard deviation of 0.1375, indicating that on average total debt constitutes approximately 18% of total equity, suggesting conservative leverage policies among Nigerian consumer goods firms. The minimum value of -0.1139 is theoretically unusual for a debt ratio and may indicate data recording errors, negative equity positions, or firms with net creditor positions, while the maximum of 0.7676 shows some firms employ significantly higher leverage. The positive skewness of 1.038844 indicates a right-skewed distribution with most firms clustering at lower leverage levels but some firms exhibiting substantially higher debt-to-equity ratios. The kurtosis of 2.833127 approaches normal distribution, suggesting moderate concentration around the mean without extreme outliers in leverage decisions.

Long-Term Debt to Total Asset (LTDA**).** The LTDA ratio has a mean of 0.1222 and standard deviation of 0.1130, indicating that long-term debt represents approximately 12% of total assets on average with relatively high variability. The minimum of 0.0005 suggests some firms rely almost entirely on short-term or equity financing, while the maximum of 0.6806 indicates some firms make substantial use of long-term debt financing. The negative skewness of -0.0578008 shows near-symmetry with slight left skew, meaning slightly more firms cluster toward higher long-term debt ratios. The kurtosis of 2.039206 indicates a platykurtic distribution with flatter tails, suggesting diverse long-term financing strategies across firms without extreme clustering.

Firm size, measured as the natural logarithm of total assets, shows a mean of 10.6908 with a standard deviation of 0.6330, indicating moderate variation in firm sizes across the sample. The minimum of 9.0868 and maximum of 11.8645 suggest the sample includes both relatively small and large consumer goods firms listed on the Nigerian Exchange. The positive skewness of 1.111083 indicates right skewness with smaller firms in the sample but some significantly larger firms creating a long tail. The kurtosis of 2.647454 suggests near-normal distribution of firm sizes with moderate concentration around the mean.

Firm age averages 51.63 years with a standard deviation of 11.67, indicating that listed consumer goods firms in Nigeria are relatively mature establishments with considerable operational history. The minimum age of 5 years and maximum of 100 years show significant variation, including relatively young firms that recently listed and long-established companies with extensive market presence. The positive skewness of 0.8637167 reveals right skewness with clustering toward younger firms but presence of very old firms extending the distribution tail. The high kurtosis of 4.950522 indicates a leptokurtic distribution with heavy tails, suggesting the presence of outliers in firm age that may influence capital structure decisions differently across the sample.

Table 2:
Correlation Matrix

VARIABLES	BS	BM	BC	TDTA	TDTE	LDTA	FS	FA	VIF
BS	1.0000								1.04
BM	0.1377	1.0000							1.07
BC	0.2398	0.0047	1.0000						1.04
TDTA	0.0436	0.0775	0.0349	1.0000					2.15
TDTE	-0.1187	-0.0879	-0.1088	0.6672	1.0000				1.99
LDTA	-0.0380	0.0837	0.0148	0.4655	0.3953	1.0000			1.34
FS	-0.0506	0.1327	0.0754	-0.0046	-0.0863	0.1168	1.0000		1.13
FA	-0.1593	0.1134	-0.0373	0.2793	0.1888	0.1029	0.1498	1.000	1.08

Source: Survey Data 2026.

Table 2 presents pairwise correlation coefficients among all variables, with variance inflation factors (VIF) to assess multicollinearity. The correlation matrix reveals generally weak bivariate associations between board variables and capital structure measures. Specifically, board size (BS) exhibits negligible correlations with TDTA (0.0436), TDTE (-0.1187), and LDTA (-0.0380). Board meetings (BM) show similarly weak correlations with TDTA (0.0775), TDTE (-0.0879), and LDTA (0.0837). Board composition (BC) also demonstrates minimal correlations with TDTA (0.0349), TDTE (-0.1088), and LDTA (0.0148). These weak coefficients suggest that, at the bivariate level, no single board attribute strongly predicts leverage choices. This finding is not unexpected, as capital structure decisions are multifaceted and likely depend on interactions among governance mechanisms and control variables.

The strongest observed correlation is between TDTA and TDTE (0.6672), which is expected since both measure leverage using total debt, differing only in the denominator (assets vs. equity). All VIF values are below 2.15, well below the conventional threshold of 5 or 10, indicating that multicollinearity does not pose a threat to the regression estimates. The correlation matrix therefore serves primarily to confirm the absence of collinearity rather than to establish substantive bivariate relationships, which are properly examined through multivariate regression analysis.

Table 3:
Regression Analysis

Variable	Model 1 (LDTA)	Model 2 (TDTA)	Model 3 (TDTE)
BC (Board Composition)	0.0148 (0.0231)	0.1657** (0.0623)	-0.0894* (0.0452)
BM (Board Meetings)	0.0034 (0.0056)	0.0221 (0.0154)	-0.0189 (0.0118)
BS (Board Size)	-0.0012 (0.0023)	-0.0087 (0.0064)	-0.0091 (0.0052)
FA (Firm Age)	-0.0019** (0.0008)	-0.0037*** (0.0011)	-0.0025** (0.0010)
FS (Firm Size)	0.0112 (0.0105)	-0.0043 (0.0198)	-0.0285 (0.0176)

Constant	-0.0234 (0.1123)	0.1984 (0.2015)	0.5672* (0.2893)
R-squared (within)	0.0872	0.1349	0.1123
Wald χ^2 (p-value)	0.042	0.001	0.038
Observations	204	204	204

Source: Survey, 2026.

*Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.10. All models include firm-level random effects. Diagnostic tests: heteroskedasticity (p=0.714), Hausman (p=0.694), Breusch-Pagan LM (p=0.000), Wooldridge serial correlation (p=0.147), CUSUM stable.*

The regression model achieves an R-squared of 0.1349, indicating that the independent variables collectively explain approximately 13.5% of the variation in the dependent variable. This relatively low explanatory power is common in corporate governance research, where many unobserved factors like managerial ability, corporate culture, macroeconomic conditions etc influence outcomes. Nevertheless, the model's explanatory power is modest, and caution is warranted in attributing strong governance effects**,** as the majority of variation (86.5%) remains unexplained by board qualities, capital structure measures, and control variables included.

The Prob> F value of 0.0000 confirms that the model is statistically significant overall, meaning the predictors jointly have a non-zero effect. However, statistical significance should not be confused with substantive explanatory power given the low R^2. The heteroskedasticity test p-value of 0.7142 suggests no evidence of heteroskedasticity. The Hausman test p-value of 0.6939 supports random effects estimation. The Breusch and Pagan Lagrangian Multiplier test (p = 0.000) justifies panel data estimation over pooled OLS. The VIF of 1.04 confirms no multicollinearity.

To address concerns about serial correlation, the Wooldridge test for autocorrelation in panel data was conducted, yielding $F(1, 15) = 2.34$ ($p = 0.147$), indicating no significant first-order serial correlation. Model stability was assessed using the cumulative sum (CUSUM) test of recursive residuals, which remained within the 5% critical bounds over the sample period (2010–2023), confirming parameter stability.

LDTA – Long-term debt to total assets,no board quality variable is statistically significant. Firm age shows a small negative coefficient (-0.0019, p<0.05), indicating that older firms use slightly less long-term debt relative to assets. This aligns with the theoretical expectation that long-term debt is heavily monitored by external creditors, reducing the marginal impact of board oversight.

TDTA – Total debt to total assets, Board composition (BC) is positive and significant (0.1657, p<0.05). A one-unit increase in the proportion of independent directors is associated with a 0.1657 increase in total debt-to-assets ratio, supporting agency theory (H_1: positive association). Firm age is negative and significant (-0.0037, p<0.01). Board meetings and board size are not significant.

TDTE – Total debt to total equity,Board composition (BC) is negative and marginally significant (-0.0894, $p<0.10$). This suggests that greater board independence is associated with lower debt relative to equity, contrary to H_1's directional prediction for TDTE. This finding highlights that leverage composition matters: independent directors may encourage total debt relative to assets (Model 2) but discourage debt relative to equity due to risk concerns or preferences for internal financing. Firm age remains negative and significant (-0.0025, $p<0.05$).

5.0 Conclusion

This study examined the impact of board qualities on capital structure of listed consumer goods firms in Nigeria. The findings reveal that board composition significantly influences leverage choices**,** with higher proportions of non-executive directors associated positively with total debt to total assets and total debt to total equity. This supports agency theory predictions that independent directors enhance monitoring of financing decisions. However, board meeting frequency shows only marginal significance, suggesting that meeting quantity alone does not guarantee effective governance oversight of capital structure. The divergent effects of capital structure measures positive for total debt to assets but negative for debt to equity indicate that the composition of leverage matters more than absolute debt levels**.** Firm age negatively affects all leverage measures, reflecting organizational inertia and accumulated internal funds that reduce reliance on debt. Firm size shows no significant influence on capital structure.

The study acknowledges a potential endogeneity concern arising from reverse causality between board characteristics and capital structure. For instance, firms with higher leverage may alter their board composition to satisfy creditor demands, rather than board independence driving leverage decisions (Wintoki et al., 2012). Given the static panel design and the absence of suitable instrumental variables within the dataset, this study does not explicitly model reverse causality. Consequently, the reported coefficients should be interpreted as associations rather than causal effects. Future research should employ dynamic panel estimators or instrumental variable approaches to establish causality (Flannery & Hankins, 2013; Nguyen et al., 2021).

Regulatory authorities should mandate minimum thresholds for independent directors on boards of listed consumer goods firms to strengthen governance standards inrelation to capital structure decisions**.** Also, firms should focus on improving board meeting quality through structured agendas and active participation rather than merely increasing frequency, as meeting frequency alone shows only marginal association with leverage**.**Furthermore, companies should optimize their capital structure by carefully balancing debt composition**,** as total debt to assets and total debt to equity exhibit opposite associations with board independence suggesting that the type of leverage matters more than total debt levels**.** Moreover, older firms should monitor the tendency toward lower leverage associated with organizational inertia, and consider governance reforms to maintain appropriate financing strategies.

Future research should incorporate additional governance mechanisms such as board committees and CEO characteristics to capture unexplained variation in capital structure (current R^2 = 0.1349). Lastly, Policymakers should develop sector-specific guidelines that recognize the unique financing needs of consumer goods firms operating in Nigeria’s emerging market context.

References

Abata, M. A., Migiro, S. O., Akande, J. O., & Layton, R. A. (2017). Capital structure and firm performance in Nigeria. *Journal of Accounting and Management*, 7(1), 45-54.

Abdul Nazar, N. (2020). Impact of capital structure on firm performance: Evidence from developing economies. *Journal of Finance and Economics*, 8(3), 145-156.

Adebayo, T., &Oluwasanmi, O. (2021). Sectoral volatility and capital structure choices in Nigeria. *African Journal of Financial Economics*, 9(2), 44-59.

Adegboye, A., Ojeka, S., &Alabi, O. (2024). Corporate governance and firm performance in Nigeria: The role of board activities. *Journal of Accounting in Emerging Economies*, 14(3), 233-250.

Afolabi, A., Otekunrin, A. O., &Akeredolu, A. (2025). Board characteristics and capital structure decisions: Evidence from the ICT sector. *Journal of Governance and Regulation*, 14(1), 45–58.

Akingunola, R. O., Olawale, L. S., &Olaniyan, J. D. (2017). Capital structure and firm performance in Nigeria: Evidence from non-financial firms. *Journal of Economics and Behavioral Studies*, 9(3), 55-64.

Alabdullah, T. T. Y., Laadjal, A., Ries, E., & Al-Asadi, Y. A. A. (2018). Board features and capital structure in emerging markets. *Journal of Advanced Management Science*, 6(2).

Alfawareh, F. S., Almashaqbeh, A., Al-Kofahi, M., Alshirah, M., Ananzeh, H., & Al-Kofahi, B. (2022). The relationship between capital structure and performance of non-financial firms listed on the Amman Stock Exchange. *Research Journal of Finance and Accounting*, 13(2), 79–90.

Aloamaka, C. C., &Ononye, N. (2025). Corporate governance structure and profitability of firms in Nigeria. *African Journal of Accounting and Financial Research*, 8(2), 101-118.

Amin, S., &Cek, K. (2023). Capital structure and profitability nexus: Evidence from emerging markets. *International Journal of Economics and Financial Issues*, 13(4), 200-210.

Appiah, K. O., Gyimah, P., & Abdul-Razak, A. (2020). Capital structure and firm performance in Ghana. *International Journal of Finance and Banking Studies*, 9(1), 12-25.

Arhinful, R., Amin, M., Mensah, E., Gyamfi, P., &Obeng, F. (2025). Leverage and firm performance: Evidence from African firms. *African Finance Journal*, 17(1), 66-84.

Eze, C., &Ugwu, J. (2019). Trade credit and working capital management in Nigerian consumer goods firms. *Journal of Business and Retail Management Research*, 13(4), 112-125.

Ezeani, E., Kwabi, F., Salem, R., Usman, M., Alqatamin, R. M. H., &Kostov, P. (2023). Corporate board and dynamics of capital structure: Evidence from UK, France and Germany. *International Journal of Finance & Economics*, 28(3), 3281-3298.

Flannery, M. J., & Hankins, K. W. (2013). Estimating dynamic panel models in corporate finance. *Journal of Corporate Finance*, 19, 1-19.

Gbadebo, A. D. (2024). Board independence and firm performance: Evidence from Nigeria. *Journal of Business and Policy Studies*, 12(1), 90-105.

Herbert, W. E., &Agwor, T. C. (2025). Board characteristics and firm performance: Evidence from Nigerian firms. *Journal of Corporate Governance Research*, 9(1), 45-60.

Ibrahim, M. (2024). Board composition and financial performance of consumer goods firms in Nigeria. *Nigerian Journal of Management Sciences*, 23(1), 67-82.

Kantudu, A. S., Kurawa, J. M., & Garba, M. S. (2026). Capital structure and firm performance in Nigeria: Evidence from listed firms. *Nigerian Journal of Accounting Research*, 18(1), 34-52.

Kuncoro, W., Putri, D. A., Syanti, N., Febriyani, R., &Setyarini, T. (2025). Capital structure and firm performance: Evidence from developing economies. *International Journal of Financial Studies*, 13(1), 1-15.

Lee, D. H., & Lee, D. W. (2024). Debt policy and firm performance: Empirical evidence from Asian markets. *Asia-Pacific Journal of Financial Studies*, 53(2), 210-228.

Nguyen, T. H., Nguyen, H. G., & Nguyen, T. P. (2021). Board characteristics and dynamic capital structure: Evidence from an emerging market. *Journal of Asian Business and Economic Studies*, 28(3), 198–214.

Obera, F. O., &Okunola, O. (2022). Corporate governance and firm value: Evidence from Nigerian listed companies. *Journal of Finance and Economic Research*, 10(2), 55-70.

Ojukwu, C., &Nwankwo, P. (2020). Cash flow stability and leverage determinants in emerging market consumer goods sectors. *International Journal of Finance and Banking Studies*, 9(3), 33-48.

Okafor, I. G. (2025). Corporate governance mechanisms and financial performance of listed firms in Nigeria. *International Journal of Accounting and Finance*, 14(2), 88-104.

Okafor, I., &Adeleke, S. (2022). Regulatory compliance and board oversight in Nigerian consumer industries. *Journal of Corporate Governance and Regulation*, 11(1), 77-92.

Okanda, E., Zhang, X., Sarfo, P., &Amankwah, E. (2025). Leverage and firm performance: Cross-country evidence. *Journal of International Financial Management*, 11(2), 77-95.

Sarwoko, E., &Viverita, V. (2024). Capital structure decisions and firm performance in emerging markets. *Journal of Economics and Business*, 120, 1020-115.

Septian, A., Pulungan, R., &Nurcholifah, I. (2025). Board meetings and firm performance: Evidence from emerging markets. *Asian Journal of Business and Accounting*, 18(1), 120-138.

Wintoki, M. B., Linck, J. S., & Netter, J. M. (2012). Endogeneity and the dynamics of internal corporate governance. *Journal of Financial Economics*, 105(3), 581-606.