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EFFECT OF FIRM TRAITS ON THE OPERATING PERFORMANCE OF LISTED CONSUMER GOODS FIRMS IN NIGERIA: 2012-2024

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ABSTRACT:*The study examined the effect of firm traits on the operating performance of listed consumer goods firms in nigeria: 2012-2024. The specific objectives were to analyse the effect of firm leverage, firm liquidity, firm size and firm age on operating performance of listed consumer goods firms in Nigeria. Operating performance was measured using asset turnover ratio while the study was underpinned by resource-based view theory. Secondary data for the study were collected from the annual reports. Using an ex-post facto research design, secondary data was extracted from the annual reports and accounts of the sampled firms listed on the Nigerian Exchange Group (NGX) over a thirteen year accounting period which spanned from 2012 to 2024. The data was analyzed using descriptive test, Pearson correlation and panel regression techniques. Findings indicate that firm size and liquidity have a positive and statistically significant effect on operating performance, proxied by asset turnover ratio (ATR). In contrast, firm age demonstrated an insignificant negative relationship with ATR. The study concludes that internal firm traits are significant determinants of performance, even in a challenging macroeconomic environment. Recommendations include that firms should prioritize efficient working capital management to optimize liquidity and pursue strategic growth to achieve economies of scale.*

Keywords: *Firm Traits, Operating Performance, Consumer Goods, Nigeria.*

INTRODUCTION

1.1 Background of the Study

The operating performance of firms in the consumer goods sector is a vital barometer for assessing the health of any developing economy. In Nigeria, this sector is a major employer of labour, a significant contributor to government tax revenue, and a primary driver of industrial output. However, the operating environment for these firms from 2012 to 2024 has been exceptionally challenging, marked by foreign exchange volatility, rising inflation, fluctuating consumer purchasing power, and intense competition. In such a turbulent landscape,

understanding the internal, controllable factors that drive performance becomes paramount for survival and growth.

Firm operating performance is not solely determined by external macroeconomic forces. Intrinsic firm-specific characteristics, or firm traits, play a crucial role in shaping financial and operational outcomes. These traits, including a firm's liquidity management policies, its scale of operations (size), its maturity in the market (age), and its capital structure (leverage), are within the purview of managerial decision-making.

The Nigerian consumer goods sector comprises companies involved in the manufacturing and distribution of fast-moving consumer goods (FMCG), durable goods, and other household products. Since the period under review (2012-2024), this sector has navigated a recession in 2016, the COVID-19 pandemic, persistent supply chain disruptions, and ongoing foreign exchange illiquidity. These challenges have squeezed profit margins, making operational efficiency a key differentiator. The performance of listed firms in this sector is closely watched by investors, analysts, and policymakers, with operating performance metrics like Return on Assets (ROA) providing a clear picture of management's effectiveness in utilizing company assets to generate profits.

1.2 Statement of the Problem

Despite the strategic importance of the consumer goods sector, many listed firms have exhibited inconsistent and, in some cases, declining operating performance. The problem this study addresses the ambiguous and often contradictory understanding of how key firm traits specifically liquidity, firm size, firm age, and firm leverage influence the operating performance of these firms.

Despite the strategic importance of the consumer goods sector, its performance has been erratic and often disappointing for investors. Many listed firms have experienced declining returns, profit warnings, and an inability to pay consistent dividends. While macroeconomic challenges are frequently blamed, there is a growing concern that internal firm-specific inefficiencies are a significant, yet under-explored, part of the problem.
Key questions remain:

- Does maintaining high liquidity cushion firms against shocks and enhance performance, or does it represent an idle resource that drags down returns?
- Do larger firms inherently perform better due to economies of scale, or does their size lead to bureaucratic inefficiencies?
- Does the experience and market legitimacy of older firms translate to superior performance, or are they outmaneuvered by more agile, younger competitors?
- To what extent does the use of debt (leverage) amplify returns for shareholders versus increasing financial distress costs and eroding operating profit?
- The existing literature provides mixed and often contradictory findings on the relationship between firm traits and operating performance, with a context-specific studies covering this period of profound economic instability.

Thus, this study seeks to empirically resolve these questions by examining the precise effect of these four firm traits on the operating performance of listed consumer goods firms in Nigeria.
The findings of this study are significant for multiple stakeholders:

Corporate Managers: Will gain evidence-based insights to guide strategic decisions on working capital management, financing mix, and growth strategies.

Investors and Analysts: Will be better equipped to evaluate firm fundamentals and make informed investment decisions by understanding which traits are reliable performance indicators.
Regulators and Policy makers: Can utilize the findings to design sector-specific policies that support the growth and stability of a critical non-oil sector of the Nigerian economy.
Academia: The study contributes to the existing body of knowledge by providing a recent, context-specific empirical analysis from a volatile emerging market.

1.3 Scope of the Study

This research is confined to consumer goods firms listed on the Nigerian Exchange Group (NGX) for the 13-year period from 2012 to 2024. The study focuses on the four firm traits mentioned: liquidity, size, age, and leverage, and their effect on operating performance, measured by Return on Assets (ROA). The population is all listed consumer goods firms, with a sample of 15 firms which were purposely selected because they have consistent data for the entire period.

2.0 REVIEW OF RELATED LITERATURE

2.1 Conceptual Review

2.1.1 Firm Traits

Firm traits refer to the inherent and observable characteristics that define the internal nature, structure, and attributes of a business organization (Ukoh, Eneh & Ekwueme, 2024). These characteristics are typically measurable, persistent, and specific to each firm, distinguishing it from others in terms of how it operates, makes decisions, and achieves performance outcomes (Dang, Samotu, Halidu& Deshi, 2025). Firm traits refer to the inherent, measurable characteristics that define a company's structure, policies, and market position. They are internal factors that management can control and are distinct from external macroeconomic variables.

2.1.2 Firm Liquidity

Firm liquidity refers to a company’s ability to meet its short-term financial obligations using its current or most easily convertible assets (Dang, Samotu, Halidu& Deshi, 2025). It represents the firm's financial flexibility and resilience in managing day-to-day operations without facing solvency issues. In simple terms, liquidity shows how quickly and efficiently a firm can pay off its immediate debts using resources that are readily available, such as cash, marketable securities, or receivables.
Liquidity is the ability of a firm to meet its short-term financial obligations as they fall due. It is commonly measured by the Current Ratio (Current Assets/Current Liabilities). The trade-off theory suggests that while high liquidity reduces risk, it may also indicate inefficient use of resources that could otherwise be invested in profitable ventures.

2.1.3 Firm Size

Firm size refers to the scale or magnitude of a company’s operations, typically captured through quantifiable indicators such as total assets, annual revenue, or number of employees (Nworie & Mba, 2022). It is a fundamental attribute that defines a firm's capacity to operate, compete, and survive within its industry. Firm size indicates the scale of a firm's operations. It is often proxied by the logarithm of total assets or total sales. Larger firms are theorized to

benefit from economies of scale, better access to capital, and greater market power, which can enhance performance.

2.1.4 Firm Age

Firm age refers to the length of time a company has been in existence since its formal establishment or incorporation (Ukoh, Eneh & Ekwueme, 2024). It is a temporal measure that indicates the duration of a firm's participation in the market and its exposure to industry practices, cycles, and environments. The age of a firm is considered a key trait that reflects accumulated experience, institutional knowledge, and operational stability (Abubakar, Sani & Ghoneim, 2024).Firm age represents the number of years a firm has been in operation. Older firms are presumed to have accumulated experience, established brand loyalty, and refined their processes (the learning curve effect). However, they may also suffer from structural rigidity and inertia.

2.1.5 Firm Leverage

Firm leverage refers to the extent to which a company uses borrowed funds (debt) in its capital structure to finance its assets, operations, and growth initiatives (Ukoh, Eneh & Ekwueme, 2024). In other words, it reflects the degree of financial dependence a firm has on external creditors compared to its internal sources of capital, such as equity. The concept of leverage is central in finance, as it provides hints into the risk profile, capital strategy, and potential return on equity for a given firm. Leverage refers to the proportion of a firm's capital that is financed by debt. Measured by the Debt-to-Equity Ratio (Total Debt/Total Equity), it reflects the financial risk of the firm. According to Modigliani and Miller (with taxes), debt can enhance value through the tax shield, but excessive debt increases the risk of financial distress and bankruptcy.

2.1.6 Operating Performance

Operating performance refers to how effectively a company utilizes its internal resources to carry out its core business activities and generate revenue (Onyekwelu, Nnadi & Iyidiobi, 2018). It is a measure of a firm's operational efficiency, indicating how well it converts its inputs such as labor, capital, and materials into productive outputs that drive sales and sustain business operations. Operating performance measures the efficiency and profitability of a firm's core business operations, independent of financing and tax decisions. Return on Assets (ROA), calculated as Earnings Before Interest and Taxes (EBIT) divided by Total Assets, is a robust metric for this purpose.

Asset Turnover Ratio

The asset turnover ratio is a financial metric that defines the efficiency with which a company uses its total assets to generate sales or revenue (Okoye & Idodo, 2025). It expresses the relationship between a firm's total revenue and the value of its assets, serving as a measure of how well the company is managing its asset base to drive core operations. This concept directly ties operational outcomes to the scale of resources employed, highlighting productivity and asset utilization (Nkwo, 2023).

The asset turnover ratio encapsulates a firm's operational productivity. It answers the question: "For every unit of asset owned, how much revenue is generated?" This is a crucial performance indicator for firms that operate in asset-heavy industries or those striving to improve internal efficiency (Ezeana & Ezeagba, 2024). A high ratio typically suggests that the

firm is generating substantial sales from a relatively small asset base, indicating effective asset use. Conversely, a low ratio may imply that assets are underutilized or inefficiently managed (Nkwo, 2023).

2.1.7 Firm Traits and Operating Performance

The theoretical link between firm traits and performance is well-established. The Resource-Based View (RBV) posits that a firm's unique resources and capabilities (which are reflected in its traits) are the primary drivers of its performance and competitive advantage.

2.2 Empirical Review

Empirical studies on this relationship have yielded mixed results, particularly in the Nigerian context.

Dang, Samotu, Halidu, and Deshi (2025) examined the effect of firm attributes on shareholder wealth in Nigeria's listed manufacturing firms. Their analysis centered on profitability, liquidity, capital structure, and governance frameworks. The study adopted a quantitative methodology using an *ex-post facto* design, analyzing data from listed consumer goods companies between 2012 and 2022. Findings revealed that neither profitability nor liquidity had a statistically significant influence on shareholder wealth. However, capital structure and corporate governance emerged as influential. Firms with high debt relative to equity experienced diminished shareholder value, highlighting the adverse impact of excessive leverage. On the other hand, firms with robust governance systems saw higher shareholder returns, emphasizing the importance of transparency and accountability in boosting investor confidence and long-term value.

Nkasi and Philemon (2025) explored how specific characteristics of firms affect the financial performance of publicly listed manufacturing companies in Nigeria. The study used Return on Assets (ROA) as the metric for measuring financial performance. Utilizing a longitudinal research approach and fixed-effects regression model, they analyzed financial data spanning from 2015 to 2023. Their analysis showed that larger firms tended to record better financial outcomes, likely due to scale efficiencies and greater market presence. Additionally, firms with strong liquidity positions were found to achieve higher returns, suggesting that financial flexibility enhances operational performance. The study emphasized the importance of maintaining an optimal size, managing debt wisely, and sustaining healthy liquidity levels to boost the financial results of firms within Nigeria’s manufacturing sector.

Odoemelam, Wobo, and Horsfall (2025) investigated how certain firm characteristics impact the stock prices of companies listed in both the financial and non-financial sectors in Nigeria. The study examined variables such as firm age, audit firm size, earnings per share (EPS), firm size, leverage, and industry type. Drawing on panel data covering 1,800 firm-year observations from 2006 to 2023, the researchers applied the Fixed Effects Model based on results from the Hausman test. To validate the reliability of their model, they conducted various diagnostic checks, including tests for multicollinearity and robustness. The analysis, carried out using E-Views 13 software, revealed that both EPS and firm size positively and significantly affected share price, indicating that investors favor firms with high profitability and large scale. Conversely, variables like audit firm size, firm age, leverage, and industry type did not show significant effects. Additionally, the interaction between firm size and industry type had a negative influence on stock prices, suggesting that sector-specific factors may moderate the benefits of firm size.

Abubakar, Sani, and Ghoneim (2024) studied how specific firm characteristics influence the financial performance of eight listed deposit money banks in Nigeria from 2010 to 2021 using a fixed effects regression model. The study focused on five attributes: firm age, firm size, leverage, growth, and managerial efficiency. Financial performance was measured by earnings per share (EPS). The results revealed that firm age and size had significant positive effects on performance, growth had a negative but significant influence, while leverage and managerial efficiency were not statistically significant. The study highlighted the critical role firm age plays in predicting performance and recommended that investors consider older and larger banks for investment due to their higher profitability.

Eneh, Agu, Nwankwo, and Agbachi (2024) investigated the influence of selected firm characteristics; size, liquidity, and leverage on the net profit margin of listed industrial goods firms in Nigeria. Adopting an ex-post facto research design, secondary data from five firms over a ten-year period (2014–2023) were analyzed using descriptive and multiple regression analyses. The results showed that firm size had a significant positive effect on net profit margin ($\beta = 2.1528$; $p = 0.0366$), while both liquidity ($\beta = 1.0242$; $p = 0.3111$) and leverage ($\beta = -1.1066$; $p = 0.2742$) had negative and insignificant effects. The study concluded that developing firm attributes can enhance brand recognition, loyalty, and partnership opportunities.

Godwin and Iyoha (2024) explored the relationship between firm-specific characteristics and the performance of listed non-financial companies in Nigeria. The research employed a panel design and utilized secondary data from 36 non-financial firms listed on the Nigerian Stock Exchange, all of which prepare financial statements ending December 31 annually. The study examined the period from 2015 to 2022. Both descriptive and inferential statistical techniques were used, with the panel least squares regression (random effect) employed to test the hypotheses via p-values. The findings indicated that leverage had a significant and positive influence on firm performance, while firm size negatively affected performance.

Olanrewaju (2024) explored the relationship between firm characteristics and financial performance among listed manufacturing companies in Nigeria. The primary variable examined was firm size, with financial performance measured by Return on Assets (ROA). The study was conducted using an *ex-post facto* design and analyzed data from 41 manufacturing firms over a five-year period (2018–2022). Data were sourced from annual reports, and regression analysis techniques were employed to evaluate the formulated hypotheses. Findings indicated that operating expenses, leverage, and liquidity had a negative and significant effect on net profit margin, while firm age showed a negative but statistically insignificant impact. Interestingly, only firm size had a positive, though also insignificant, relationship with net profit margin. The study concluded that cost control and financial structure play more critical roles in shaping firm profitability than firm size alone in the Nigerian manufacturing context.

Handoyo, Mulyani, Ghani and Soedarsono (2023) examined the influence of firm characteristics on a firm's performance in Indonesia. The study used 1024 data sets of 128 manufacturing firms listed on the Indonesia stock exchange from 2014 to 2021. Data panel regression and independent t-tests were employed for statistical analysis. Adopting Miles and Snow's strategy typology framework, the findings indicated that the firm size, industry type, and competition intensity significantly influence the firm's performance.

Adekoya, Nwaobia and Siyanbola (2022) investigated the effect of firm characteristics on the financial value of pension fund administrators in Nigeria. The study employed *ex-post facto*

research design. Purposive sampling technique was used to select a sample of fifteen (15) from 22 pension fund administrators which have been in existence for the past ten years (2011-2020). Data for this study were extracted from the published annual reports and accounts of the sampled companies which were validated by certification of external auditors and National Pension Commission (PenCom). Data were analysed using descriptive and inferential (multiple regression) statistics at $\alpha = 0.05$ level of significance. The study found that firm characteristics jointly exerted significant impact on net asset value per unit of pension fund administrators ($Adj.R^2 = 0.9298$, $F(6, 143) = 254.96$, $p < 0.05$). The study concluded that firm attributes enhanced the value of pension fund administrators in Nigeria. It was recommended that pension fund managers should make stakeholders' interest (contributors and shareholders) a priority and use the selected firm attributes to their advantage to drive performance and create value.

Taiwo, Festus, and Ajao (2022) explored how firm attributes affect financial performance metrics of selected Nigerian companies. Using an *ex-post facto* research design, the study focused on a sample of 111 firms out of a total population of 161 listed companies as of December 31, 2020. The firms were selected through stratified and quota sampling methods. Secondary data was gathered from audited financial statements covering the years 2011 to 2020. Analytical techniques included descriptive statistics and multiple regression analysis. The study found that firm attributes collectively had a statistically significant impact on both net profit margin and return on capital employed. Based on these findings, the authors concluded that corporate attributes play a vital role in enhancing financial performance and recommended that firms continue to leverage these characteristics to strengthen financial outcomes.

Eriki et al. (2021) found a positive relationship between firm size and profitability but a negative one for leverage in Nigerian manufacturing firms. Conversely,
Uwalomwa et al. (2015) found that leverage had a positive impact on the performance of some Nigerian firms.

2.3 Theoretical Framework

This study is anchored on **Resource-Based Theory (RBT)** of the firm originated in the field of strategic management and was first formally articulated by Birger Wernerfelt in 1984 in his seminal paper titled *"A Resource-Based View of the Firm"* (Frances & Nworie, 2025).
The main postulation of the RBV is that firms possess heterogeneous resources both tangible and intangible that are not perfectly mobile across firms (Davis & DeWitt, 2021). According to the theory, it is these valuable, rare, inimitable, and non-substitutable (VRIN) resources that enable firms to achieve and maintain a competitive edge over others. RBV suggests that performance differences among firms are primarily attributed to differences in their internal resource endowments rather than external market conditions (Nworie, Okafor & John-Akamelu, 2022). These resources include physical capital, human capital, financial assets, organizational culture, technology, and routines. The theory asserts that not all resources contribute equally to competitive advantage; only those that meet the VRIN criteria can generate sustainable superior performance. Moreover, the RBV emphasizes the importance of how firms manage, deploy, and protect these resources. It proposes that the firm's ability to integrate and reconfigure its resource base in alignment with its strategic goals determines its long-term success. Thus, the theory shifts the focus from external market positioning (as seen in Porter's Five Forces) to internal capabilities and competencies.

The relevance of the RBV theory to the current study the effect of firm traits on the operating performance of listed consumer goods firms in Nigeria is evident in its core assumptions. Firm traits such as leverage, liquidity, size, and age can be conceptualized as strategic internal resources or capabilities that influence how effectively a firm utilizes its assets to generate operational output. For example, adequate liquidity may serve as a valuable financial resource that enables smooth operations and quick responsiveness to market opportunities. Similarly, firm size may reflect the breadth of physical and human resources available, while firm age may embody accumulated knowledge and organizational routines. Leverage, as a capital structure component, represents a resource strategy that affects operational risk and efficiency. The relevance of RBT is that it provides a robust theoretical foundation for understanding how these traits, when strategically managed, contribute to differences in operating performance measured in this study through indicators like asset turnover ratio. In the Nigerian context, where firms in the consumer goods sector face volatile market dynamics and economic uncertainties, the ability to marshal internal resources efficiently becomes even more critical.

2.4 Gaps in the Literature

The identified gaps this study filled are:
Contextual Gap: A focused analysis on the Nigerian consumer goods sector, which has unique dynamics.
Temporal Gap: Covering a recent and turbulent period (2012-2024) that includes significant economic shocks.
Methodological Gap: Simultaneously examining the interplay of these four specific traits on a pure operating performance metric (ROA) within a single, coherent model.

3.0 METHODOLOGY

3.1 Research Design

This study employs an *ex-post facto* research design. This design is appropriate because the variables involved are not manipulated but are observed and analyzed retrospectively.

3.2 Sources of Data

Secondary data was sourced from the published annual reports and financial statements of the selected consumer goods firms listed on the NGX. The data covers the period from 2012 to 2024.

3.3 Model Specification and Analytical Method

The panel regression model for this study is specified as:

$$ROA_{it} = \beta_0 + \beta_1 CR_{it} + \beta_2 FSIZE_{it} + \beta_3 FAGE_{it} + \beta_4 LEV_{it} + \varepsilon_{it}$$

Where:
ROA_{it} = Return on Assets for firm i in year t (EBIT/Total Assets).
CR_{it} = Current Ratio for firm i in year t (Current Assets/Current Liabilities).
$FSIZE_{it}$ = Firm Size for firm i in year t (Logarithm of Total Assets).
$FAGE_{it}$ = Firm Age for firm i in year t (Current year - incorporation year).
LEV_{it} = Leverage for firm i in year t (Total Debt/Total Equity).
β_0 = Intercept.
β_1 - β_4 = Coefficients of the independent variables.
ε_{it} = Error term.

Data was analyzed using descriptive statistics and panel data regression techniques (Fixed or Random Effects) in, with diagnostic tests for multicollinearity, heteroskedasticity, and autocorrelation conducted.

4.0 RESULTS

4.2 Descriptive Analysis of Data

The descriptive analysis of the data is shown below in Table 4.1.

Table 4.1 Descriptive Analysis

	ATR	*FLEV*	*FLIQ*	*FSZ*	*FAGE*
Mean	0.890339	1.470195	1.060400	7.540458	51.80000
Median	0.851304	0.630938	0.997578	7.700466	51.00000
Maximum	4.344196	20.01988	2.880813	9.051642	101.0000
Minimum	0.000000	0.193620	0.005775	4.758056	7.000000
Std. Dev.	0.574516	3.401056	0.602667	0.925408	19.66409
Skewness	2.352466	4.075206	0.563356	-1.150676	0.160078
Kurtosis	14.33657	18.78603	3.290391	4.372759	3.188780
Jarque-Bera	1224.066	2564.477	10.99968	58.34307	1.122370
Probability	0.000000	0.000000	0.004087	0.000000	0.570533
Sum	173.6161	286.6881	206.7781	1470.389	10101.00
Sum Sq. Dev.	64.03328	2244.033	70.46229	166.1376	75015.20
Observations	195	195	195	195	195

Source*: Eviews 10 Statistical Output (2025)*

Table 4.1 shows that the descriptive analysis of Asset Turnover Ratio (ATR), which measures operating performance, has a mean value of 0.8903, suggesting that, on average, the listed consumer goods firms in Nigeria generate about ₦0.89 in sales for every ₦1.00 of assets owned. The median value of 0.8513 is close to the mean, indicating a relatively symmetrical distribution of ATR among firms. However, the minimum value is 0.0000, showing that some firms recorded no revenue in at least one period, while the maximum is quite high at 4.3442, indicating a few firms significantly outperformed others in asset utilization. The standard deviation of 0.5745 implies moderate variability in ATR across firms and years. The high skewness (2.35) and kurtosis (14.34) indicate a positively skewed distribution with extreme outliers, which is confirmed by the Jarque-Bera probability of 0.0000, meaning the distribution deviates significantly from normality.

The Firm Leverage (FLEV), measured by total liabilities to total assets, has a mean of 1.4702, which is higher than expected and suggests that, on average, firms are highly leveraged—possibly even beyond their total asset base due to accumulated debts or accounting treatments. The median leverage of 0.6309 indicates that at least half of the firms maintain more moderate leverage, pointing to a wide disparity across firms. This disparity is further supported by a maximum of 20.0199, a very high figure that likely reflects extreme debt usage in one or more firms, while the minimum is 0.1936, showing that some firms have low debt levels. The high standard deviation of 3.4011 confirms significant variation in leverage. With a skewness of 4.0752 and kurtosis of 18.7860, the leverage data are extremely positively skewed with heavy tails, and the Jarque-Bera test ($p = 0.0000$) confirms non-normality.

The Firm Liquidity (FLIQ), calculated as current assets over current liabilities, has a mean of 1.0604, suggesting that most firms can meet their short-term obligations, though barely, on

average. The median of 0.9976 supports this, indicating that many firms are operating around a 1:1 current ratio. The maximum liquidity is 2.8808, indicating some firms maintain a comfortable liquidity buffer, while the minimum of 0.0058 reflects extreme illiquidity in some periods or firms. The standard deviation of 0.6027 shows moderate dispersion, while the skewness of 0.5634 indicates a mild positive skew in the distribution. The kurtosis of 3.29 is slightly above normal, and the Jarque-Bera p-value (0.0041) suggests a statistically significant deviation from normality.

The Firm Size (FSZ), measured by the natural logarithm of total assets, shows a mean of 7.5405, with a median of 7.7005, suggesting that most firms are large, and the distribution is slightly left-skewed. The maximum size of 9.0516 and minimum of 4.7581 indicate a considerable range in the scale of operations among the sampled firms. A standard deviation of 0.9254 shows moderate variability in firm sizes. The negative skewness of -1.1507 suggests that the distribution leans toward larger firms, and the kurtosis of 4.3728 points to a more peaked distribution than the normal curve. The Jarque-Bera probability (0.0000) confirms the data are not normally distributed.

The Firm Age (FAGE) has a mean of 51.8 years, suggesting that, on average, the firms in the sample have been in existence for over five decades, indicating maturity and long operational history. The median value of 51.0 years confirms that the data is fairly centered. The minimum age of 7 years and maximum of 101 years reveal a wide range in firm maturity. The standard deviation of 19.66 further reflects this substantial spread. Unlike other variables, firm age is approximately normally distributed, as seen from its low skewness (0.1601) and kurtosis (3.1888) values. This is reinforced by the Jarque-Bera p-value of 0.5705, which suggests the age data do not significantly deviate from a normal distribution.

4.2.1 Correlation Analysis

The correlation test provided a preliminary understanding of the direction and strength of the linear relationships between the independent variables (firm traits) and the dependent variable (operating performance). While it does not establish causation, it helped identify patterns worth exploring further in regression analysis.

Table 4.2 Correlational Analysis

Correlational Analysis: Ordinary
Date: 06/04/25 Time: 01:29
Sample: 1 195
Included observations: 195

Correlation Probability	ATR	FLEV	FLIQ	FSZ	FAGE
ATR	1.000000 -----				
FLEV	-0.393611 0.0000	1.000000 -----			
FLIQ	0.449762 0.0000	-0.456489 0.0000	1.000000 -----		

FSZ	0.214746	-0.690716	0.201642	1.000000	
	0.0026	0.0000	0.0047	-----	
FAGE	0.122678	-0.318287	0.165999	0.309933	1.000000
	0.0875	0.0000	0.0204	0.0000	-----

***Source**: Eviews 10 Statistical Output (2025)*

The correlation between firm leverage (FLEV) and asset turnover ratio (ATR) is -0.3936, with a p-value of 0.0000, indicating a statistically significant and moderately negative relationship. This means that as leverage increases, the operating performance, as measured by asset turnover, tends to decrease. In practical terms, this suggests that highly leveraged consumer goods firms in Nigeria may face operational inefficiencies, possibly due to the burden of debt servicing or poor asset utilization associated with increased liabilities.

The correlation between firm liquidity (FLIQ) and asset turnover ratio is 0.4498, with a p-value of 0.0000, indicating a statistically significant and moderate positive relationship. This implies that firms with better liquidity positions those more capable of covering short-term obligations tend to exhibit higher operational performance. A possible explanation is that liquid firms are better able to maintain inventory, pay suppliers, and manage working capital efficiently, which in turn enhances their asset turnover.

For firm size (FSZ), the correlation with ATR is 0.2147, and the associated p-value is 0.0026, revealing a statistically significant but weak positive relationship. This indicates that larger firms, in terms of total assets, tend to show slightly better operating performance. The weak strength of the relationship suggests that while firm size contributes to performance, other factors such as management efficiency and market competition may dilute its impact on how well assets are turned into revenue.

The correlation between firm age (FAGE) and ATR is 0.1227, with a p-value of 0.0875, indicating a weak and statistically insignificant positive relationship at the 5% level (though marginally significant at the 10% level). This suggests that older firms might have slightly better operating performance due to experience and established market presence, but this effect is minimal and not strong enough to be conclusive.

4.2.2 Model Diagnostics

Cross-sectional dependence test, Hausman test, heteroskedasticity test, multicollinearity test and linearity test were carried out to assess the validity of the model.

Test of Multicollinearity

Table 4.3 Multicollinearity Analysis
Variance Inflation Factors
Date: 06/04/25 Time: 01:23
Sample: 1 195
Included observations: 195

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
FLEV	0.000274	2.879321	2.424026
FLIQ	0.004703	5.374439	1.307063
FSZ	0.003071	136.3042	2.012278
FAGE	3.84E-06	9.051643	1.135001
C	0.206209	158.6163	NA

***Source**: Eviews 10 Statistical Output (2025)*

The multicollinearity test, as shown in Table 4.3 (Multicollinearity Analysis), employed the Variance Inflation Factor (VIF) to assess the degree of linear correlation among the independent variables firm leverage (FLEV), firm liquidity (FLIQ), firm size (FSZ), and firm age (FAGE). Multicollinearity occurs when predictor variables are highly correlated, which can distort coefficient estimates and weaken statistical inferences. All the VIF values in the table are well below the critical threshold of 10, with the highest being 2.424 for firm leverage. This indicates that multicollinearity is not a serious issue in the model, meaning that the explanatory variables are sufficiently independent of one another to permit accurate regression estimates.

Test of Cross-sectional Independence
Table 4.4 Cross-sectional Dependence
Residual Cross-Section Dependence Test
Null hypothesis: No cross-section dependence (correlation) in residuals
Equation: Untitled
Periods included: 13
Cross-sections included: 15
Total panel observations: 195
Note: non-zero cross-section means detected in data
Cross-section means were removed during computation of correlations

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	230.7924	105	0.0000
Pesaran scaled LM	8.680503		0.0000
Pesaran CD	4.595501		0.0000

***Source**: Eviews 10 Statistical Output (2025)*

The cross-sectional dependence test, presented in Table 4.4 (Cross-sectional Dependence), utilized the Pesaran CD test to determine whether the residuals from different cross-sectional units (firms) in the panel dataset are correlated. The null hypothesis of the test assumes no cross-sectional dependence. With a probability value of 0.0000, the test rejects the null hypothesis, indicating significant cross-sectional dependence among the firms. This finding suggests that external shocks or market-wide influences could be affecting multiple firms simultaneously, a common scenario in industry-based panel data. Recognizing cross-sectional dependence is essential because ignoring it could lead to inefficient or biased model estimates.

4.2.2.3 Panel Heteroskedasticity

Table 4.5 Panel Heteroskedasticity Test
Panel Cross-section Heteroskedasticity LR Test
Null hypothesis: Residuals are homoskedastic
Equation: UNTITLED
Specification: ATR FLEV FLIQ FSZ FAGE C

	Value	df	Probability
Likelihood ratio	212.6465	15	0.0000

***Source**: Eviews 10 Statistical Output (2025)*

The panel heteroskedasticity test, shown in Table 4.5 (Panel Heteroskedasticity Test), used a likelihood ratio approach to test whether the residuals have constant variance (homoskedasticity) across firms. The null hypothesis assumes homoskedasticity. With a probability value of 0.0000, the test rejects the null hypothesis, indicating the presence of heteroskedasticity. This means that the error variance differs across observations, which can lead to inefficient and biased estimations if not corrected. Recognizing this issue made the researcher to apply robust standard errors (Cross-section weights) to adjust for it in the regression model.

Linearity Test
Table 4.6 Linearity Test
Ramsey RESET Test
Equation: UNTITLED
Specification: ATR FLEV FLIQ FSZ FAGE C
Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	0.954592	189	0.3410
F-statistic	0.911245	(1, 189)	0.3410
Likelihood ratio	0.937915	1	0.3328

***Source**: Eviews 10 Statistical Output (2025)*

The linearity test, reported in Table 4.6 (Linearity Test), employed the Ramsey RESET test to examine whether the functional form of the regression model is correctly specified. The null hypothesis assumes that the model is linear and correctly specified. The probability value of

0.3410 implies that the null hypothesis cannot be rejected, suggesting that the model is appropriately specified and does not suffer from omitted variable bias or nonlinearity. This means the linear relationship between the dependent and independent variables holds, making the results more reliable.

4.2 Results Discussion and Implications

The insignificance of liquidity and firm age is intriguing. It suggests that merely having high liquid assets does not guarantee better performance; what matters is how efficiently that liquidity is managed.

The findings confirm that firm size is a critical driver of operating performance in Nigeria's consumer goods sector. This aligns with the Resource-Based View, as larger firms likely exploit economies of scale in production, distribution, and marketing, and have stronger bargaining power with suppliers and creditors, leading to higher asset utilization efficiency.

The significantly negative relationship between leverage and performance is a stark finding. It suggests that the costs of debt (high interest rates, financial distress, and agency costs) in the Nigerian high-interest-rate environment outweigh the benefits of the tax shield. This implies that many consumer goods firms are operating beyond their optimal debt capacity, and debt is eroding, rather than enhancing, their operating profits.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This study concludes that among the firm traits examined, firm size and financial leverage are the most potent determinants of the operating performance of listed consumer goods firms in Nigeria. Larger scale operations contribute positively to performance, while a heavy reliance on debt financing significantly impairs it. Liquidity management and firm age, while important, were not found to be statistically significant drivers of operating performance in this specific context over the studied period.

5.2 Recommendations

Based on the findings, the following recommendations are proffered:

1. That Firm Management/Managers should prioritize achieving an optimal capital structure by reducing reliance on expensive debt and exploring equity financing or internally generated funds. Strategic growth and expansion to achieve economies of scale should be pursued.
2. That investors when evaluating consumer goods firms, investors should pay close attention to leverage ratios and firm size as key indicators of potential operating efficiency and profitability.
3. That Policymakers such as the government and monetary authorities should work towards creating a macroeconomic environment with lower interest rates to reduce the cost of borrowing for firms, making debt a more viable tool for growth.

5.3 Contributions to Knowledge

This study provides a contemporary, sector-specific empirical model linking key firm traits to operating performance in a challenging emerging market. It clearly establishes the primacy of

capital structure decisions and scale as performance drivers in the Nigerian consumer goods sector, offering a refined perspective for both theory and practice.

5.4 Limitations of the Study

This study is limited by its focus on only four firm traits and the use of accounting-based measures of performance. Future research could incorporate market-based performance measures and additional variables like corporate governance metrics or managerial competence.

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