

**ANUK COLLEGE OF
PRIVATE SECTOR
Accounting Journal**

VOL. 2 NO. 3 OCTOBER, 2025

**A Publication of College of Private Sector
Accounting
ANAN University Kwall, Plateau State, Nigeria.**

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Published October, 2025.

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Printed by:
MUSSAB Printers,
NB, 9 Muri road by gwari road, Kaduna State, Nigeria.
Phone contact: 07038776658,
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- IV. Introduction
- V. Literature Review
- VI. Methodology
- VII. Results and Discussion
- VIII. Conclusion and Recommendations
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EFFECT OF FIRM SIZE ON NON-CURRENT ASSETS AND FIRM VALUE OF LISTED CONSUMER GOODS FIRMS IN NIGERIA

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ABSTRACT

The desire to map out strategies to enhance the firm values of firms have been in the front burner of decisions of top management. This study investigated moderating effect of firm size on the relationship between non-current assets and firm value of listed consumer goods firms in Nigeria over the period 2014-2023. The independent variables of the study were property, plant and equipment, long term investments and intangible assets while the dependent variable was firm value. The study had a population of 21 while the sample size was 17 which was arrived at using purposive sampling technique. The study was analysed using multiple regression technique through the aid of STATA 14 software. The study found that PPE and firm size had positive and significant effect while long term investment had negative and significant effect. However, intangible assets had positive and non-significant effect on firm value. Thus, the null hypotheses were rejected for most of the key variables, particularly those relating to PPE, long-term investments, firm size, and their interactions. This indicates that these variables significantly influence firm value, both directly and through the moderating role of firm size. However, the null hypotheses for intangible assets, return on assets, and the interaction between intangible assets and firm size failed to be rejected, implying no significant influence in this model. It was recommended amongst others that firms in the consumer goods sector continue to prioritize investments in these tangible operational assets. Firms should strategically channel resources toward upgrading outdated machinery, expanding production capacity, and maintaining physical infrastructure. Also, firms should perform rigorous cost-benefit analyses on existing long-term investments and consider divesting from non-performing assets. Furthermore, intangible assets are either underreported or undervalued in financial statements, thereby limiting their perceived contribution to firm value. Firms should adopt improved methods of identifying, valuing, and reporting intangible assets in compliance with international accounting standards.

Keywords: Firm value, Non-current assets, Property plant and equipment, Long-term investments, Intangible assets

1. INTRODUCTION

Firm value serves as a comprehensive indicator of a company's financial health, growth potential, and market performance from a global perspective. It reflects investor confidence and influences access to capital, partnerships, and international expansion (Zhang & Wang, 2023). Globally, firms with higher value are more resilient to economic shocks and better positioned in competitive markets. Ahmed and Garcia (2022) opined that firm value is also influenced by governance quality, innovation, and strategic resource allocation across regions. In emerging economies, firm value signals institutional maturity and

investment appeal, while in developed markets, it drives mergers, acquisitions, and global market integration. International investors often assess firm value to make informed portfolio decisions (Kim & Chen, 2023). Thus, maintaining and enhancing firm value is critical for global competitiveness and long-term success.

From an African perspective, firm value is a key measure of corporate success, reflecting a firm's ability to generate wealth, attract investment, and ensure long-term sustainability. Okonkwo and Muriithi (2023) affirmed that it serves as a benchmark

for financial performance, especially in markets with limited access to external financing. In Africa, firm value is closely tied to governance practices, macroeconomic stability, and regulatory environments. High firm value enhances investor confidence and supports capital market development across the continent (Mensah & Ofori, 2022). Moreover, it enables firms to compete regionally and globally by signaling operational efficiency and financial resilience. Factors such as ownership structure, capital allocation, and asset utilization significantly influence firm value in African economies (Adewuyi & Uwuigbe, 2023). Therefore, enhancing firm value is central to fostering corporate growth and economic development in Africa.

From a Nigerian perspective, firm value is a crucial indicator of a company's financial performance, investor appeal, and long-term viability in a challenging economic environment. Olayemi and Adebayo (2023) stated that it reflects how effectively firms utilize resources to generate profits and sustain growth amid inflation, exchange rate volatility, and regulatory shifts. In Nigeria, firm value also influences market capitalization and the ability to attract foreign and domestic investments. Strong firm value is often associated with sound financial management, good corporate governance, and transparent reporting practices (Uche & Okafor, 2022). Moreover, it serves as a basis for strategic decisions such as mergers, acquisitions, and capital restructuring. With a growing emphasis on corporate sustainability and investor protection, firm value is gaining prominence in Nigerian capital markets (Ibrahim & Musa, 2023). Thus, enhancing firm value is essential for both corporate growth and national economic development.

A good firm value is crucial for a listed company, as it reflects the company's financial health, growth potential, and ability to attract investment. A high firm value enhances shareholder wealth, increases access to capital, and strengthens the company's market position, all of which are essential for long-term sustainability (Akinwale & Salau, 2023). Strong firm value also signals a well-managed and profitable company, which can positively influence investor confidence, operational efficiency, and business expansion opportunities (Uche & Okafor, 2022). Conversely, poor financial performance can have severe consequences for various stakeholders. For investors, it may result in declining stock prices, reduced dividends, and financial losses (Nduka & Okeke, 2023). Employees might face wage cuts, layoffs, or job insecurity, leading to diminished morale and productivity (Bassey & Essien, 2022). Poor financial performance can also lead to delays in payments to suppliers, which may disrupt their cash flow and business relationships. Creditors could experience higher default risks, impacting their

financial stability and trust in the firm. Ultimately, a decline in firm value due to poor performance could lead to a tarnished reputation, reduced investment attractiveness, and, in extreme cases, bankruptcy (Sule & Agbaje, 2023).

The relationship between non-current assets and firm value is a fundamental area of interest for both academics and practitioners, especially in emerging economies like Nigeria. Non-current assets, such as property, plant, and equipment (PP&E), serve as the backbone of operational capacity for many companies, particularly those in the manufacturing and consumer goods sectors. These assets are crucial for enhancing production efficiency, improving competitiveness, and driving firm profitability, all of which directly influence firm value (Akinwale & Salau, 2023). However, despite the centrality of these assets in the Nigerian context, the existing body of literature is insufficient in providing a clear understanding of how the management and utilization of non-current assets specifically impact the firm value of listed consumer goods companies in Nigeria. This research aims to address the various gaps in understanding the influence of non-current assets on firm value among Nigerian listed consumer goods firms.

A significant evidence gap exists regarding the effect of non-current assets on firm value in the Nigerian consumer goods sector. Much of the existing research has focused on the general manufacturing sector or non-financial firms, leaving a dearth of studies that isolate the consumer goods sector in Nigeria (Bassey & Essien, 2022). Consumer goods companies are unique in that they face distinct challenges such as consumer spending fluctuations, price sensitivity, and regulatory changes, which may impact the role of non-current assets in driving firm value. Although some studies in Nigeria have explored the relationship between assets and financial performance, there is limited empirical evidence examining non-current assets specifically in terms of their contribution to firm value in this context (Akinwale & Salau, 2023). The lack of sector-specific research makes it difficult to draw generalized conclusions or apply findings from other industries to the consumer goods sector in Nigeria.

Therefore, this study aims to address these gaps by providing a comprehensive analysis of how non-current assets influence firm value among listed consumer goods firms in Nigeria, with the hope of offering valuable insights for stakeholders in both academic and practical domains.

- I. What is the effect of property, plant and equipment on firm value of listed consumer goods firms in Nigeria?
- ii. How does long term investments affect the firm

- value of listed consumer goods firms in Nigeria?
- iii. What is the effect of intangible assets on the firm value of listed consumer goods firms in Nigeria?
- v. What is the moderating role of board size in the relationship between corporate assets composition and the firm value of listed consumer goods firms in Nigeria?

The main objective of the study is to examine the moderating effect of firm size on the relationship between non-current assets and firm value of listed consumer goods firms in Nigeria. Specifically, the study seeks to:

- i. assess the effect of property, plant and equipment on the firm value of listed consumer goods firms in Nigeria;
- ii. evaluate the effect of long-term investments on firm value of listed consumer goods firms in Nigeria;
- iii. determine the effect of intangible assets on firm value of listed consumer goods firms in Nigeria;
- iv. examine the moderating effect of firm size on the relationship between non-current assets and firm value of listed consumer goods firms in Nigeria.

Based on the objectives of the study, the following hypotheses were formulated in null forms and were tested in the course of the study.

- H_{01} : property plant and equipment has no significant effect on firm value of listed consumer goods firms in Nigeria.
- H_{02} : Long term investments has no significant effect on firm value of listed consumer goods firms in Nigeria.
- H_{03} : **Intangible Assets** has no significant effect on firm value of listed consumer goods firms in Nigeria.
- H_{04} : **firm size** has no significant moderating effect on firm value of listed consumer goods firms in Nigeria.

2. LITERATURE REVIEWS

2.1 Conceptual Review

This study examines the moderating role of firm size on the relationship between non-current assets and firm value. In this section, the concepts of the study are discussed with a view to explaining them in the context of this study. The variables include firm value, Property, Plant and Equipment, long term investments and intangible assets, return on assets and firm size.

2.1.1 Firm value

Firm value, in the context of financial theories, is commonly defined as the present value of the future cash flows expected from the company's assets. This theoretical approach forms the basis for widely used models such as the discounted cash flow (DCF) method, where future earnings are projected and then discounted back to the present value using a discount rate that reflects the time value of money and risk

(Brigham & Ehrhardt, 2020). Financial theory posits that firm value is inherently linked to profitability, with key financial performance metrics like return on assets (ROA) and net income serving as indicators of a firm's financial health. It further highlights that the firm's ability to generate stable and reliable cash flows from its assets plays a central role in determining its value in the market. In essence, financial theories underscore that the value of a firm is intrinsically tied to its future financial prospects rather than solely its current market standing or accounting value. Based on the conceptual reviews above, firm value is a comprehensive concept that reflects a company's financial health, operational efficiency, and strategic potential. Financially, it is often viewed as the present value of expected future cash flows, influenced by profitability, risk levels, and the firm's ability to generate returns above the cost of capital. Market perceptions also play a significant role, with stock prices reflecting investor confidence in the firm's future performance.

2.1.2 Non-Current Assets

Non-current assets are typically defined in financial accounting as assets that are expected to provide economic benefits to a firm over a period longer than one year. These assets, which include property, plant, equipment, and intangible assets, are essential to a firm's long-term operational capabilities and value generation (FASB, 2019). Non-current assets are not intended for immediate sale or consumption but rather support the company's activities over an extended period. Their classification as non-current distinguishes them from current assets, which are expected to be realized or consumed within the next year. As such, non-current assets are crucial for assessing the long-term financial health and capacity of a firm, influencing decisions around investment and financing strategies. Their proper valuation is critical for stakeholders in understanding the financial position and future profitability of a firm.

2.1.2.1 Property, Plant, and Equipment

Property, plant, and equipment (PPE) are critical assets in the financial reporting process, as they represent the long-term physical resources a company relies on to generate revenue over an extended period. According to the International Financial Reporting Standards (IFRS), PPE includes tangible assets such as land, buildings, machinery, and vehicles, which are not intended for resale but are essential for a company's ongoing operations (IFRS Foundation, 2018). These assets are recognized at historical cost, and over time, their value is depreciated to reflect their consumption or reduction in economic value. The conceptual reviews show that Property, plant, and equipment (PPE) are long-term tangible assets that form the backbone of a firm's operational

infrastructure and play a vital role in revenue generation. These assets such as land, buildings, and machinery support production and service delivery, making them critical to financial reporting, business valuation, and strategic planning. Proper management of PPE, including depreciation and maintenance, ensures accurate financial statements, reduces costs, and enhances profitability. Strategically, PPE enables scalability, innovation, and competitiveness, while also requiring robust risk management and corporate governance to preserve asset value. Furthermore, sustainable investments in PPE contribute to environmental goals and long-term financial gains. Collectively, PPE underpins both firm-level performance and broader economic growth.

2.1.2.2 Long-Term Investments

Long-term investments are assets purchased by investors or companies with the intention of holding them for a period longer than one year, allowing for sustained capital growth and generating income over time. These assets may include real estate, equity securities, bonds, and other financial instruments that are not intended for immediate sale. Long-term investments typically contribute to a company's financial growth through capital appreciation, dividends, or interest income, and provide a more stable return compared to short-term investments. The holding of these assets aligns with an investor's or firm's strategic goals for wealth accumulation and income generation. The general perception is that these assets are less volatile, offering a buffer against market fluctuations and offering more robust financial stability in the long term (Fabozzi, 2017). They are often seen as less liquid but with greater potential returns over an extended period, thus serving long-term business and investment goals. Based on the above concepts, long-term investments are strategic assets held by firms and investors for extended periods to support sustained growth, income generation, and competitive advantage.

2.1.2.3 Intangible Assets

Intangible assets are non-physical assets that provide economic value to a company. These assets often include intellectual property such as patents, trademarks, copyrights, and goodwill, along with non-physical resources like customer relationships or brand reputation. Unlike tangible assets, intangible assets do not have a physical presence but can be highly valuable to a business in terms of long-term profitability and competitive advantage. According to the International Financial Reporting Standards (IFRS), intangible assets are identifiable, non-monetary assets without physical substance, which are controlled by an entity and expected to provide future economic benefits. The recognition of intangible assets in a company's balance sheet reflects their potential to contribute to the business's ability to generate revenue (IASB, 2019). These assets play a

key role in modern economies, particularly in technology and service-based industries, where the value is often derived from intellectual property rather than physical assets. Thus, from the conceptual reviews, intangible assets, including intellectual property, brand reputation, and customer relationships, are non-physical yet vital contributors to firm value, particularly in knowledge-driven and service-based economies. These assets support innovation, competitive advantage, and long-term profitability. Effective recognition and valuation, guided by IFRS and GAAP, are essential for accurate financial reporting and strategic management.

2.1.2.4 Return on assets (ROA)

Return on assets (ROA) is a financial metric that measures the profitability of a firm relative to its total assets. It reflects the company's ability to generate profits from its investments in assets. By dividing net income by total assets, ROA provides a clear indicator of how effectively the company utilizes its assets to produce earnings. A higher ROA typically indicates better management of resources, while a lower ROA suggests inefficiencies. Rappaport (2006) asserts that ROA is vital for assessing a company's financial health, especially for those with substantial capital investment in physical assets. The metric offers insights into both operational performance and asset productivity, helping stakeholders assess a firm's overall profitability from its asset base. Therefore, Return on Assets (ROA) is a key financial metric that measures how effectively a company generates profits from its total assets, reflecting its operational efficiency and asset management.

2.1.2.5 Firm size

Firm size is a key determinant of organizational capacity and performance. As defined by Rajan and Zingales (2022), total assets are used to measure firm size because they provide an indication of the available resources that a company has to support its operations. Larger firms typically have larger asset bases, which allow them to engage in large-scale production, expansion into new markets, and long-term investments. Total assets encompass both tangible assets, such as buildings and equipment, and intangible assets, like patents and goodwill. These resources facilitate a firm's ability to generate income, expand its market share, and ultimately influence its profitability. Moreover, large firms benefit from economies of scale, which enable them to produce goods at a lower per-unit cost, making them more competitive in the market.

2.2 Empirical Studies

This section presents a review of the empirical studies that examined the interactions among property plant and equipment, long term investments, intangible assets, and firm size as a moderator and firm value.

This review aimed to identify literature gaps that this study aimed to address

2.2.1 Property, Plant and Equipment and Firm Value

Akintoye and Adesina (2020) conducted a study to explore the impact of property, plant, and equipment on the financial performance and overall value of Nigerian manufacturing firms. They selected a sample of 50 firms listed on the Nigerian Stock Exchange over a period of 10 years. The study utilized regression analysis to examine the relationship between PPE and firm value, specifically focusing on the effect of capital investments in physical assets on the firm's profitability and market value. The findings revealed a significant positive relationship between PPE and firm value, indicating that firms with substantial investments in tangible assets experienced higher profitability and market valuation. The study recommended that manufacturing firms should prioritize strategic investment in PPE to enhance operational efficiency, improve production capacity, and maximize returns. However, the study's critique highlights that the sample was restricted to manufacturing firms, limiting the generalizability of the findings to other sectors like services or technology.

Adeola et al. (2021) examined the role of property, plant, and equipment in determining the firm value of Nigerian oil and gas firms. The study employed a mixed-method approach, including both qualitative and quantitative techniques, with a sample of 20 oil and gas companies. Fixed-effects regression analysis was used to assess the relationship between PPE and firm value, with findings showing a positive impact of PPE investments on firm value. The study recommended that oil and gas companies in Nigeria should focus on expanding and modernizing their PPE assets, especially in exploration and production capacities, to increase their market value. However, a critique of the study was that it did not consider the influence of government policies, such as taxation or subsidies, on capital investment decisions in the oil and gas sector.

Madu et al. (2020) focused on the effect of property, plant, and equipment on firm value in the Nigerian banking sector. The study used a sample of 15 banks listed on the Nigerian Stock Exchange and employed regression analysis to test the hypothesis. The findings revealed that PPE had a significant positive impact on firm value, particularly through its effect on reducing operational costs and improving capital structure. The study recommended that banks should strategically invest in improving their physical assets, such as branch infrastructure and technological systems, to enhance efficiency and, ultimately, firm value. However, the critique of this study points out that it did

not examine the role of non-physical assets, such as intangible assets and intellectual property, which are also crucial in the banking sector.

Adebayo and Olaniyan (2021) explored the effect of property, plant, and equipment on the firm value in Nigeria's construction sector. They conducted a quantitative study with a sample of 12 publicly listed construction companies, using panel data and fixed-effects regression analysis. The study found that investments in PPE significantly affected firm value, with companies involved in large-scale infrastructure projects exhibiting higher market value. The study recommended that Nigerian construction firms focus on capitalizing on modern construction equipment and facilities to improve operational outcomes. The critique suggested that the study could have incorporated the role of regulatory changes in the sector, which may also influence investments in PPE.

2.2.2 Long-term investments and firm value

Alaba and Owolabi (2020) investigated the influence of long-term investments on the firm value of Nigerian manufacturing firms. The study utilized a sample of 25 firms listed on the Nigerian Stock Exchange (NSE) between 2010 and 2018. A panel data methodology with fixed-effects regression analysis was employed to assess the effect of long-term investments in physical and intangible assets on firm value. The results indicated a significant positive relationship between long-term investments and firm value, suggesting that companies with substantial long-term asset investments experience higher market valuations and profitability. The study recommended that manufacturing firms in Nigeria focus on long-term investment strategies to enhance their value. However, a critique of the study pointed out the limitation of not considering macroeconomic factors such as inflation, which could influence the investment outcomes.

Igbinovia and Alabi (2020) explored the relationship between long-term investments and firm value in Nigeria's oil and gas sector. The study included 15 oil companies listed on the Nigerian Stock Exchange and employed regression analysis to test the hypothesis. The results showed that long-term investments in exploration, drilling, and infrastructure positively impacted the firm value of oil companies. The study recommended that oil companies should prioritize long-term capital investments in new technologies to enhance profitability and firm value. However, a critique of the study pointed out that the findings were specific to the oil and gas sector and may not apply to firms in other industries.

Ayodele and Adewale (2021) investigated the effect of long-term investments on firm value within the Nigerian agricultural sector. Using a sample of 20 publicly listed agricultural firms over a 9-year period

(2010-2018), the study employed ordinary least squares (OLS) regression analysis. The results indicated that long-term investments in infrastructure, machinery, and land acquisition had a significant positive effect on firm value. The study recommended that Nigerian agricultural firms increase investments in sustainable agricultural technologies to boost profitability and firm value. However, the critique suggested that the study failed to include environmental factors that might also affect investment outcomes in agriculture.

Udo and Adeyemi (2020) examined the impact of long-term investments on firm value in Nigeria's retail industry. Their sample consisted of 30 retail companies listed on the Nigerian Stock Exchange from 2010 to 2017. The researchers used multiple regression analysis to investigate the relationship between long-term investments in retail outlets and firm value. The study found that significant long-term investments in physical assets and supply chain infrastructure led to an increase in firm value. The study recommended that retail firms focus on expanding and modernizing their stores and supply chains to improve firm value. However, the critique noted that the study did not consider the influence of online retailing, which has become a key factor in retail performance.

2.2.3 Intangible assets and Firm Value

Liu and Xie (2020) investigated the impact of intangible assets, specifically intellectual property (IP) and patents, on firm value in Chinese technology firms. They used a sample of 50 publicly listed technology companies from 2010 to 2018. The study applied panel data regression analysis to examine the relationship between intangible assets and firm value. Findings revealed a significant positive effect of intangible assets on firm value, with IP assets acting as key value drivers for technology companies. They recommended that firms should strengthen IP management and patenting strategies to enhance their market value. A critique of the methodology noted the study's limited focus on a single industry, limiting generalizability to other sectors.

Al-Qudah and Alrawashdeh (2021) examined how intangible assets, including brand equity and goodwill, influence firm value in Jordanian firms. Using a sample of 60 firms listed on the Amman Stock Exchange from 2015 to 2020, the study employed multiple regression analysis to assess the relationship. The results indicated that brand equity and goodwill were significantly positively correlated with firm value. The study recommended firms to focus on building brand reputation and goodwill to enhance their value. A critique of the study's methodology suggested a potential bias in measuring brand equity through financial data alone, excluding non-financial factors like customer loyalty.

De Souza and Araujo (2020) explored the effect of intangible assets such as intellectual capital on firm value in Brazilian firms. The study used a sample of 100 publicly traded companies in Brazil over a period of 10 years (2022-2019). Using fixed-effects regression analysis, the authors found a positive relationship between intellectual capital (including human, structural, and relational capital) and firm value. The study recommended that firms focus on enhancing their intangible assets, particularly human and relational capital, to increase firm value. A methodological critique was that the study did not incorporate external factors such as economic conditions which could also influence firm value.

Khamis and Basit (2021) investigated the relationship between intangible assets, specifically R&D expenditures, and firm value among firms in the pharmaceutical sector. They analyzed data from 50 pharmaceutical companies in Europe from 2012 to 2019 using regression models. The study found a significant positive effect of R&D investments on firm value, highlighting that pharmaceutical firms with high R&D spending experienced higher market valuations. The study recommended increased investments in research and innovation to enhance firm value. A critique of the methodology suggested that the study focused on only one sector, limiting its external validity.

2.2.4 Return on assets and Firm Value

Adebayo and Olanrewaju (2021) sought to examine the impact of ROA on the firm value of manufacturing firms listed on the Nigerian Stock Exchange. They used a sample of 45 firms over the period from 2012 to 2019. The researchers utilized a panel data regression model to investigate the relationship between ROA and firm value, which was measured by market capitalization. The results revealed a significant positive relationship, implying that higher ROA contributed to higher firm market value, which is crucial for firms in a competitive environment. Based on the findings, they recommended that manufacturing firms focus on improving their asset management practices and operational efficiency. However, the study's limitation was the failure to account for macroeconomic factors, such as inflation and interest rates, which could have impacted firm value. The exclusion of these variables may have led to a potential omitted variable bias.

Chukwu and Ibrahim (2020) investigated the relationship between ROA and firm value within Nigeria's financial sector. Using a sample of 30 firms from 2010 to 2018, the authors applied a fixed-effects regression model to analyze the data. Their findings indicated that ROA had a positive and statistically significant effect on firm value, with more efficient firms being valued higher in the stock market. This suggests that investors place a premium on firms that

effectively manage their assets. The study recommended that financial firms enhance asset utilization and reduce inefficiencies to increase their market value. However, the narrow focus on the financial sector might limit the applicability of the results to other industries, which may exhibit different dynamics in terms of asset utilization and market value.

Oladele and Aremu (2021) explored the impact of ROA on the firm value of firms in Nigeria's oil and gas sector. The study used a sample of 25 firms from 2014 to 2019, applying a regression model to determine the relationship. Their findings revealed a significant positive correlation, indicating that firms with higher ROA were valued higher by the market. They suggested that improving asset efficiency and optimizing production processes would enhance firm value. However, the critique noted that the oil and gas sector's unique characteristics such as government regulations and global oil price fluctuations were not fully accounted for, which could have impacted the results.

Adeyemi and Akinmoladun (2020) explored how ROA influences the firm value of Nigerian telecommunications firms. They used a sample of 15 firms from 2010 to 2018, applying a panel data regression model. Their findings indicated that ROA had a positive effect on firm value, especially in the telecommunications sector. The study recommended that firms in this sector focus on improving operational efficiency to boost their market valuation. A critique of the study noted that it did not consider the impact of competition or market saturation, which might have influenced ROA and firm value.

2.2.5 Firm size as a moderator and Firm Value

Mbah and Okwudili (2020) explored the moderating role of firm size on the relationship between financial leverage and firm value in Nigeria. They adopted a sample of 35 publicly listed firms from the Nigerian Stock Exchange between 2010 and 2018. Using a fixed-effects regression model, they found that firm size significantly moderates the relationship between financial leverage and firm value. Larger firms were shown to benefit more from financial leverage than smaller firms. The study recommended that smaller firms focus on efficient asset management to enhance their value. The critique of the methodology was that the study used only one financial metric (leverage), which may not fully capture firm value dynamics across different industries.

Abiola and Akinola (2021) investigated how firm size moderates the relationship between corporate social responsibility (CSR) and firm value in Nigeria. Their study focused on 40 Nigerian firms listed on the stock exchange from 2012 to 2019. Using a panel regression model, they found that larger firms with more CSR

activities showed a more significant positive impact on firm value. The recommendation was that small firms should increase their CSR activities to enhance firm value, albeit with a strategic focus to ensure cost-effectiveness. A critique of their methodology was the exclusion of sector-specific factors that might influence CSR's impact on value.

Alimi and Olowookere (2021) analyzed how firm size moderates the effect of innovation on firm value in Nigerian manufacturing firms. The study involved 30 firms from 2012 to 2019, with a multiple regression approach for data analysis. The results indicated that innovation significantly enhanced firm value, especially in larger firms. They recommended that smaller manufacturing firms increase their innovation efforts to compete with larger firms. A critique of the study was the reliance on self-reported data from annual reports, which could lead to bias and inaccuracy.

Nwachukwu and Eze (2021) explored the effect of firm size as a moderator on the relationship between financial performance and firm value in the Nigerian retail sector. Their study analyzed data from 15 firms over the period 2013 to 2019, utilizing a random-effects regression model. The findings indicated that larger firms had a stronger positive relationship between financial performance and firm value, compared to smaller firms. The study recommended that smaller firms focus on improving their operational efficiency. However, it did not account for the external economic conditions, such as inflation, which could influence the results.

Ibrahim and Abdullahi (2020) examined the moderating role of firm size on the relationship between risk management practices and firm value in Nigeria's insurance industry. They used a sample of 18 insurance firms from 2011 to 2018, with data analyzed using a panel data regression approach. The results showed that firm size positively moderated the relationship between risk management and firm value. Larger firms that adopted sound risk management practices exhibited higher market valuations. They recommended that smaller insurance firms adopt more robust risk management strategies. A critique was the narrow industry focus, which may limit the generalizability of the findings.

2.3 Theoretical Reviews

This study adopted Dynamic Theory of Profit to provide a robust foundation for understanding the relationship between non-current assets and firm value. The theory offers an understanding of profit generation, emphasizing that the ability of firms to adapt to economic changes through managing asset structure is critical for sustaining profits and, ultimately, their value.

2.3.1 Dynamic Theory of Profit by J.B. Clark

The Dynamic Theory of Profit was propounded by John Bates Clark in 1899. The central premise of the theory revolves around the idea that profits are not fixed but dynamic, evolving in response to changing market conditions, competition, and the allocation of resources such as labor and capital. Clark (1899) argued that profits are a residual income after accounting for the costs of production, such as wages for labor and interest on capital. The theory emphasizes the role of economic forces in determining profits and firm performance, where firms continuously adjust to external changes in order to remain profitable. Clark's theory offers an understanding of profit generation, emphasizing that the ability of firms to adapt to economic changes is critical for sustaining profits and, ultimately, their value.

When applied to non-current assets, Clark's Dynamic Theory provides insight into how these assets influence firm value through their contribution to the productive capacity of a firm. Non-current assets, such as property, plant, and equipment (PPE), are essential for the production of goods and services. Clark's theory implies that firms with substantial investments in PPE can increase their productive capacity, thus enhancing their ability to generate profits. Long-term investments, another key component of non-current assets, also play a significant role in Clark's framework. According to the Dynamic Theory, long-term investments are crucial for maintaining and enhancing a firm's future productive capacity. Firms that consistently reinvest profits into long-term assets, such as machinery, technology, or infrastructure, can better adapt to changes in the market and sustain their profitability over time. By continually upgrading their capital assets, firms position themselves to generate higher returns in the future, which leads to an increase in their value. In this sense, Clark's theory suggests that firms that focus on long-term investments can create a sustainable competitive advantage, leading to sustained profits and firm value growth.

Intangible assets, while not explicitly addressed by Clark, can be understood within the context of his Dynamic Theory. Intangible assets, such as intellectual property, brand equity, and human capital, contribute significantly to a firm's ability to generate future profits. In conclusion, the Dynamic Theory of Profit and firm value, as proposed by Clark, provides a foundational understanding of how non-current assets influence firm value. Through its emphasis on the firm's ability to adapt to market changes and optimize resource allocation, the theory explains how investments in tangible and intangible assets can increase a firm's capacity to generate profits and,

consequently, enhance its overall value. Although the theory has its limitations, particularly in overlooking modern-day factors like ownership structure, it offers valuable insights into the role of assets in driving firm value in a dynamic, competitive market.

3. METHODOLOGY

This study adopted the ex post facto research design to investigate the moderating effect of firm size on the relationship between non-current assets and firm value. The ex post facto research design, also known as causal-comparative research, investigates the potential causes and effects of existing conditions or events that have already occurred. Positivism is appropriate for this study because it relies on the analysis of quantitative financial data and seeks to establish cause-and-effect relationships between variables, such as non-current assets, firm size, and firm value. The population for this study consists of 21 listed consumer goods manufacturing firms on the Nigerian Exchange Group (NGX) as at December, 2023. After filtering the 4 firms that did not have complete data for the period were excluded, reducing the population from 21 to 17 firms as the sample size over the period 2014-2023. The method of data collection for this study will solely rely on secondary data, which offers several advantages in terms of reliability, efficiency, and comprehensiveness. The study employed Panel regression models: the Fixed Effects Model (FEM) and the Random Effects Model (REM). The model specification is presented as:

$$FVAL_{it} = \beta_0 + \beta_1 PRPE_{it} + \beta_2 LTIV_{it} + \beta_3 INAS_{it} + \beta_4 ROAS_{it} + \epsilon_{it} \dots \dots \dots (1)$$

$$FVAL_{it} = \beta_0 + \beta_1 PRPE_{it} + \beta_2 LTIV_{it} + \beta_3 INAS_{it} + \beta_4 ROAS_{it} + \beta_5 FMSZ_{it} + \epsilon_{it} \dots \dots \dots (2)$$

$$FVAL_{it} = \beta_0 + \beta_1 PRPE_{it} + \beta_2 LTIV_{it} + \beta_3 INAS_{it} + \beta_4 ROAS_{it} + \beta_5 FMSZ_{it} + \beta_6 (PRPE \times FMSZ)_{it} + \beta_7 (LTIV \times FMSZ)_{it} + \beta_8 (INAS \times FMSZ)_{it} + \epsilon_{it} \dots \dots \dots (3)$$

Table 1: Variable Measurement

Variables	Code	Measurement	Source
Dependent			
Firm value	FVAL	Tobins Q (Measured as the total market value of the firm divided by its total asset value)	Olowookere, <i>et al.</i> (2023); Zhang, & Li (2023)
Independent			
Property, plant and equipment	PRPE	Ln (Property plant and equipment)	Ofori <i>et al.</i> (2021); Olalekan, and Adeleke (2022)
Long Term Investments	LTIV	Ln (sum of equity investments, debt investments mutual funds and real estate investments)	Yahaya <i>et al.</i> (2020); Tan and Osei (2023).
Intangible assets	INAS	Ln (sum of patents, trademarks, copyrights, goodwill, software technology)	Olalekan and Adeleke (2022); Okoye and Chidi (2023)
Control Variable	ROAS	Net profit/total assets for the year *100	Olalekan and Adeleke (2022);
Moderator			
Firm Size	FMSZ	Ln (Total assets at year end)	Ujunwa (2012).

Source: Author's compilation, (2025)

4. DATA PRESENTATION AND ANALYSIS

4.1 Data Presentation

This chapter presents the results of the study, including the descriptive statistics of variables, normality test and correlation analysis. The section also contains regression results, post-estimation and specification tests. The implications of findings are presented after the test of hypotheses and discussion of major findings.

4.1.1 Descriptive Analysis

The descriptive analysis presented the basic characteristics of the variables through the mean, standard deviation, minimum and maximum. Table 4.1 presents the summary statistics.

Table 4.1 Descriptive Analysis

Variable	Mean	Std. Dev.	Minimum	Maximum
firm value	3.8588	10.4442	0.09	70.72
Property, plant and equipment	7.7428	1.8647	3.75	12.24
Long term investments	2.5135	1.1684	1.2	6
Intangible assets	1.6841	0.8045	0.9	4.1
Return on assets	4.9974	12.5590	-58.01	53.96
Firm Size	17.7655	2.0677	14.69	23.15

Source: STATA 14 Outputs, 2025

Table 4.1 presents the descriptive statistics for key financial variables of listed consumer goods firms in Nigeria. The average firm value is 3.86, with a wide standard deviation of 10.44, indicating significant variation in market valuation across firms—ranging from 0.09 to 70.72—suggesting that a few large or multinational firms dominate the sector. Property, Plant, and Equipment (PPE) has a mean of 7.74 and a relatively stable spread (SD = 1.86), reflecting the capital-intensive nature of the industry where firms maintain substantial tangible assets. Long-term investments show an average of 2.51 with limited

dispersion (SD = 1.17), implying a cautious and consistent approach to strategic financial commitments due to economic uncertainty. Intangible assets have a mean of 1.68 (SD = 0.80), with values between 0.9 and 4.1, indicating modest holdings in intellectual property, goodwill, and brand value—underscoring the sector's focus on tangible production. Firm size, with a mean of 17.77 (SD = 2.07), ranges from 14.69 to 23.15, demonstrating a diverse composition of medium and large firms, including both local enterprises and multinational corporations.

Table 4.2 Normality Test: Shapiro-Wilk

Variable	Z	Probability
firm value	10.234	0.0000
Property, plant and equipment	0.924	0.1777
Long term investments	6.700	0.0000
Intangible assets	7.540	0.0000
Return on assets	6.348	0.0000
Firm Size	5.702	0.0000

Source: STATA 14 Outputs, 2025.

Form the normality table, only Property, Plant and Equipment are normally distributed while firm value, long-term investments, intangible assets, return on assets, and firm size are not normally distributed. These findings have methodological implications. Since most of the variables deviate from normality, this may affect the validity of statistical methods that assume normal distribution (e.g., ordinary least squares regression). As such, robust estimation techniques may be required in subsequent analyses to obtain reliable results.

Table 4.3 Correlation Analysis

Variable	Firm value	Property, plant and equipment	Long term investments	Intangible assets	Return on assets	firm size
Firm value	1.000					
Property, plant and equipment	0.2178*	1.000				
Long term investments	-0.0679	0.6459*	1.000			
Intangible assets	-0.0656	0.5445*	0.8711*	1.000		
Return on assets	0.0554	-0.2123*	-0.1635*	-0.1714*	1.000	
Firm Size	0.3097*	0.3978*	0.2901*	0.2235*	0.1363	1.000

Source: STATA 14 Outputs, 2025

The correlation analysis in Table 4.3 provides valuable insights into the relationships between firm value and non-current assets, highlighting the dynamics within the listed consumer goods firms in Nigeria. The correlation analysis of listed consumer goods firms in Nigeria reveals that firm size plays a significant role in determining both asset structure and firm value, with larger firms typically holding more substantial physical, intangible, and long-term assets. Firm value is positively correlated with property, plant and equipment and firm size, but shows weak negative

relationships with long-term investments and intangible assets, indicating these assets may not directly influence firm value in the short term. The negative correlations between return on assets and all asset types suggest that increasing asset investments, particularly in fixed and intangible assets, may not immediately lead to higher profitability. Overall, the findings suggest that while larger firms tend to have more diverse assets, the relationship between asset accumulation and profitability or market value is complex and may involve long-term effects.

Table 4.6 Panel Corrected Standard Error Regression (Pooled OLS) Model 1

Variable	Coeff.	Std. Err.	z-value	Prob
Constant	-8.9076	4.0550	-2.200	0.028
Property, plant and equipment	2.6170	0.7165	3.65	0.000
Long term investments	-3.3160	1.0726	-3.09	0.002
Intangible assets	0.2570	1.2767	0.20	0.840
Return on assets	0.0809	0.0316	2.56	0.011
R-Squared		0.1310		
Wald Chi2		19.24		
Probability		0.000		

Source: STATA 14 Outputs, 2025.

The regression analysis of model 1, presented in Table 4.6 examines the relationship between non-current assets and firm value for listed consumer goods firms in Nigeria. The R-squared value of 0.1310 indicates that approximately 13.1% of the variability in the

dependent variable can be explained by the independent variables in the model. This suggests that while the model explains some of the variance in firm value, other factors not included in the model may be influencing the dependent variable. The Wald Chi2

statistic of 19.24, with a probability of 0.000, indicates that the model as a whole is statistically significant and that at least one of the predictors is significantly related to the dependent variable.

The constant term of -8.9076 indicates the expected value of the dependent variable when all independent variables are zero. This negative constant suggests that, in the absence of any of the explanatory variables (such as property, plant and equipment, long-term investments, intangible assets etc.), the firm value would be expected to decrease. The standard error of the constant is 4.0550, with a z-value of -2.200 and a probability of 0.028, which is significant at the 5% level. This indicates that the constant is statistically different from zero, suggesting its relevance in the model.

The coefficient for property, plant and equipment is 2.6170, with a standard error of 0.7165, and a z-value of 3.65. The probability is 0.000, which is highly significant (less than 0.05). This implies that, for listed consumer goods firms in Nigeria, an increase in property, plant, and equipment is positively related to the dependent variable, suggesting that higher investments in physical assets contribute positively to firm value.

The coefficient for long-term investments is -3.3160,

with a standard error of 1.0726 and a z-value of -3.09. The probability value is 0.002, which is statistically significant at the 1% level. This negative relationship suggests that, in the context of Nigerian listed consumer goods firms, an increase in long-term investments is associated with a decrease in the dependent variable. This could imply that firms in this sector may experience diminishing returns from long-term investments, or that such investments may not immediately translate into increased firm value.

The coefficient for intangible assets is 0.2570, with a standard error of 1.2767, resulting in a z-value of 0.20 and a probability of 0.840. This high probability indicates that the relationship between intangible assets and the dependent variable is not statistically significant. Therefore, in the case of listed consumer goods firms in Nigerian, intangible assets do not appear to have a meaningful impact on the firm's value in the short term.

The coefficient for return on assets is 0.0809, with a standard error of 0.0316 and a z-value of 2.56. The probability is 0.011, which is statistically significant at the 5% level. This positive relationship indicates that higher return on assets contributes positively to the dependent variable, suggesting that profitability is an important driver of firm value or performance in the Nigerian consumer goods sector.

Table 4.7 Panel Corrected Standard Errors Regression (Pooled OLS) Model 2

Variable	Coefficient	Standard Error	z-value	Probability
Constant	-27.9480	5.5043	-5.08	0.000
Property, plant and equipment	2.0142	0.7324	2.75	0.006
Long term investments	-3.6182	1.1557	-3.13	0.002
Intangible assets	0.4883	1.2617	0.390	0.699
Return on assets	0.0340	0.0407	0.84	0.403
firm size	1.3685	0.3850	3.55	0.000
R-Squared		0.1895		
Wald Chi2		34.25		
Probability		0.000		

Source: STATA 14 Outputs, 2025.

The regression results presented in Table 4.7 provide further insight into the factors influencing firm value among listed consumer goods firms in Nigeria, using the panel corrected standard errors approach. This model builds on earlier analyses by incorporating firm size as additional explanatory variable. The R-squared value of 0.1895 indicates that approximately 18.95% of the variance in the dependent variable is explained by the model. The constant term of -27.9480, which is statistically significant at the 1% level ($p = 0.000$), suggests that when all independent variables are held at zero, the dependent variable (presumably firm value) would be substantially negative. This provides a baseline against which the effects of the independent variables can be interpreted. Property, plant and equipment (PPE) has a positive and statistically significant coefficient of 2.0142 ($p =$

0.006). This implies that investments in tangible fixed assets are strongly associated with increases in firm value or performance for consumer goods firms. It reinforces the importance of physical infrastructure in driving market confidence and operational capability in the sector.

Long-term investments show a negative and statistically significant effect, with a coefficient of -3.6182 ($p = 0.002$). This suggests that such investments, while potentially strategic, may be poorly timed or underperforming in the short term for listed consumer goods firms in Nigerian. It may also reflect inefficiencies or delayed returns in capital deployment, which could negatively affect perceived firm value.

Intangible assets again demonstrate a positive but statistically insignificant relationship (coefficient = 0.4883, $p = 0.699$), indicating that while these assets may hold long-term strategic value, they do not have a measurable short-term impact on firm value in this sector. This could be due to challenges in valuation, recognition, or monetization of intangibles like brand equity or intellectual property in the Nigerian context. Return on assets (ROA), despite being a conventional profitability indicator, exhibits a weak and statistically insignificant effect (coefficient = 0.0340, $p = 0.403$). This result implies that short-term accounting profitability may not be a key driver of firm value for listed consumer goods firms, possibly due to market focus on other performance dimensions like growth potential, asset base, or scale.

Firm size emerges as a critical factor, with a positive and highly significant coefficient of 1.3685 ($p = 0.000$). This indicates that larger firms tend to have higher firm value or better performance, likely due to

economies of scale, broader market reach, and greater access to capital. In the Nigerian consumer goods sector, firm size may serve as a proxy for market dominance, investor confidence, and resilience.

Comparing the results of models 1 and 2, it is apparent that the R-squared has increased to 0.1895 in model 2 as against 0.1310 in model 1. This significant increase, by about 5.85% in the coefficient of determination, suggests that firm size has a significant moderating role on the relationship between non-current assets and firm value. The R-square change thus justifies the choice of the moderating variable examined in this research.

4.3.1 Diagnostic Tests

The study performed diagnostic tests, including multicollinearity, heteroscedasticity and specification tests. Multicollinearity test results provide insights into the extent to which the independent variables are correlated with one another.

Table 4.8 Multicollinearity Test

Variable	VIF	Tolerance Value
Property, plant and equipment	1.95	0.5115
Long term investments	5.04	0.1983
Intangible assets	4.18	0.2392
Return on assets	1.11	0.9027
firm size	1.26	0.7965
Mean	2.71	

Source: STATA 14 Outputs, 2025.

Table 4.4 presents the multicollinearity test results using the Variance Inflation Factor (VIF) and Tolerance Value for the independent variables. The findings show no serious multicollinearity, as all VIF values are below the threshold of 10 and, in most cases, below 5. The mean VIF of 2.71 indicates that the variables are sufficiently independent. Long-term investments recorded the highest VIF of 5.04 (tolerance = 0.1983) and intangible assets 4.18 (tolerance = 0.2392), suggesting moderate but acceptable correlation levels. Property, plant, and equipment (VIF = 1.95), firm size (VIF = 1.26), and return on assets (VIF = 1.11) showed low collinearity. Overall, the results confirm that the predictors are

distinct and reliable, preserving the model's statistical validity and supporting sound inferences on the relationship between asset structure, firm size, and firm value.

In addition, the diagnostic tests presented in Table 4.5 are critical for assessing the reliability and validity of the regression model used in the study. Two key tests are reported: the heteroskedasticity test and the Hausman specification test. These tests help determine whether specific assumptions of classical regression analysis are violated, thereby guiding the choice of appropriate estimation techniques.

Table 4.9 Diagnostic Tests

Test	Chi2	Probability
Group Wise Heteroscedasticity test	182.88	0.000
Hausman Specification	66.33	0.000

Source: STATA 14 Outputs, 2025.

The diagnostic results revealed a Chi-square value of 182.88 with a p-value of 0.000 from the heteroskedasticity test, indicating that the error variances were not constant across observations, thus violating the homoskedasticity assumption of ordinary least squares (OLS) regression. This irregularity could lead to biased standard errors and unreliable statistical inferences. Similarly, the Hausman specification test produced a Chi-square value of 66.33 with a p-value of 0.000, confirming that the fixed effects model was more appropriate than the

random effects model since the explanatory variables were correlated with the error term. Given these findings, the study employed the Panel Corrected Standard Errors (PCSE) regression technique, as recommended by Beck and Katz (2022), to correct for heteroskedasticity and contemporaneous correlation of errors. The use of PCSE ensured that the coefficient estimates remained consistent and that the standard errors were robust, thereby enhancing the validity and reliability of the regression results on the effect of non-current assets on firm value.

Table 4.10 Panel Corrected Standard Errors Regression (Fixed Effects) Model 3

Variable	Coefficient	Standard Error	z-value	Probability
Constant	178.5724	47.2481	3.78	0.000
Property, plant and equipment	-43.9522	8.3106	-5.29	0.000
Long term investments	72.0303	18.8717	3.82	0.000
Intangible assets	-35.5763	27.9154	-1.27	0.203
Return on assets	0.0236	0.0233	1.01	0.311
firm size	-10.0843	2.8477	-3.54	0.000
Property, plant and equipment * firm size	2.5000	0.4838	5.17	0.000
Long term investments * firm size	-4.0718	1.0844	-3.75	0.000
Intangible assets * firm size	1.9958	1.6620	1.23	0.219
R-Squared		0.5324		
Wald Chi2		48.46		
Probability		0.000		

Source: STATA 14 Outputs, 2025.

4.3.2 Test of Hypotheses and discussion of findings

The test of hypotheses based on the regression results presented in Table 4.6 evaluates the significance of the independent variables on firm value in listed consumer goods firms in Nigeria. All hypotheses are tested at the 5% significance level, with interpretations guided by the coefficient values, standard errors, z-values, and p-values. The results in Table 4.7 was used to test the hypotheses regarding the direct effect of non-current assets on firm value, while the results in Table 4.10 was used to test the moderating effect of firm size.

H01: property plant and equipment has no significant effect on firm value of listed consumer goods firms in Nigeria.

The null hypothesis (H_{01}) posits that Property, Plant, and Equipment (PPE) has no significant effect on firm value, implying that variations in investment in physical assets, such as buildings and machinery, do not influence the dependent variable. However, the p-value for PPE is 0.006, which is lower than the 0.05 significance level. This means that the study rejected the null hypothesis (H_{01}) because PPE does indeed have a statistically significant positive effect on firm value. Specifically, for every one-unit increase in PPE, the firm's performance increases by approximately 2.01 units, suggesting that, in this case investments in

physical assets contribute positively to the firm's overall value and performance. This finding is in line with those of Akintoye and Adesina (2020); Ibrahim and Ali (2019); Adeola et al. (2021) and Madu et al. (2020) who found a positive and significant effect of PPE on firm value.

H02: Long term investments has no significant effect on firm value of listed consumer goods firms in Nigeria.

The null hypothesis (H_{02}) suggests that long-term investments have no significant effect on firm value. This implies that an increase in long-term investments, such as shares in other firms or financial instruments, does not influence the firm value. The p-value for long-term investments is 0.002, which is also less than the 0.05 significance threshold. As a result, the study rejected the null hypothesis (H_{02}) because long-term investments have a statistically significant negative effect on firm value. Specifically, the negative coefficient of -3.6182 indicates that for every additional unit invested in long-term assets, firm value decreases, possibly due to poor investment choices, underperformance of the investments, or the opportunity cost of capital tied up in such ventures. This finding opposes the findings of Alaba and Owolabi (2020); Eze and Obinna (2019); Igbinovia and Alabi (2020); Ayodele and Adewale (2021) that

found a positive and significant effect of long term investments on firm value.

H03: Intangible Assets has no significant effect on firm value of listed consumer goods firms in Nigeria.

The null hypothesis (H_{03}) suggests that intangible assets, such as intellectual property, brand equity, and goodwill, have no significant effect on firm value. A failure to reject this hypothesis would imply that these non-physical assets do not substantially affect the firm value of the firm. In this case, the p-value for intangible assets is 0.699, which is much greater than the 0.05 significance level. Consequently, the study failed to reject the null hypothesis (H_{03}), indicating that intangible assets do not have a statistically significant effect on firm value. This result could be attributed to the difficulty in consistently measuring intangible assets or the indirect and long-term nature of their impact on performance, which may not manifest immediately in the firm's financial outcomes. This finding is not in tandem with those of Liu and Xie (2020); Al-Qudah and Alrawashdeh (2021); Koc and Uysal; Garcia and Cabrera (2019) that found a positive and significant effect of intangible assets on firm value.

H04: Return on Assets has no significant effect on firm value of listed consumer goods firms in Nigeria.

The null hypothesis (H_{04}) asserts that Return on Assets (ROA), a measure of how efficiently a firm uses its assets to generate profit, has no significant effect on firm value. A failure to reject this hypothesis would imply that variations in ROA are not influencing the dependent variable. The p-value for ROA is 0.403, which is greater than 0.05, suggesting that the study fail to reject the null hypothesis (H_{04}). This indicates that ROA does not have a statistically significant impact on firm value in this particular model. The lack of significance could be due to overlapping effects with other asset-related variables or limited variation in ROA across the firms in the sample, which may prevent it from showing a meaningful relationship with the dependent variable. This finding is in line with the findings by Adebayo and Olanrewaju (2021); Chukwu and Ibrahim (2020); Yilmaz and Kaya (2019); Ogbeide and Ezeani (2020) that documented a positive and significant effect of return on assets on firm value

H05: firm size has no significant moderating effect on firm value of listed consumer goods firms in Nigeria.

The null hypothesis (H_{05}) claims that firm size has no significant effect on firm value, implying that the size of a firms, whether large or small does not influence its overall performance. However, the p-value for firm size is 0.000, which is well below the 0.05 threshold, leading us to reject the null hypothesis (H_{05}) and

conclude that firm size has a statistically significant positive effect on firm value. Specifically, the positive coefficient of 1.3685 suggests that as firms grow larger, they tend to perform better in terms of firm value, likely due to economies of scale, greater market power, or better resource diversification. This result highlights that larger firms, in this model, benefit from their size in terms of enhanced firm value.

Interaction Effects (Moderating role of firm size). The null hypothesis posits that there is no significant interaction between Property, Plant, and Equipment (PPE) and firm size in affecting firm value, meaning that the relationship between PPE and firm value remains constant regardless of the firm's size. In this case, the coefficient for the interaction term between PPE and firm size is 2.5000, with a p-value of 0.000. Since the p-value is less than the 0.05 significance level, the study reject the null hypothesis because the interaction between PPE and firm size does have a significant effect on firm value. The positive coefficient of 2.5000 indicates that the negative impact of PPE on firm value is mitigated or even reversed as firm size increases. This suggests that larger firms are more capable of managing or utilizing physical assets efficiently, likely due to having more resources, better management systems, or greater operational capabilities that allow them to overcome the potential inefficiencies associated with heavy investments in physical assets which is in line with the findings of Mbah and Okwudili (2020). In other words, while PPE might reduce performance in smaller firms due to issues such as depreciation or maintenance costs, larger firms are able to leverage their size to use these assets more effectively, resulting in a more favorable impact on their firm value.

The null hypothesis suggests that the interaction between Long-Term Investments and firm Size does not significantly affect firm value, meaning that firm size has no moderating role on how long-term investments influence firm value. The coefficient for the interaction between Long-Term Investments and Firm Size is -4.0718, and the p-value is 0.000. Since the p-value is below the 0.05 threshold, the study reject the null hypothesis, indicating that the interaction between long-term investments and firm size does indeed have a statistically significant effect on firm value. The negative coefficient of -4.0718 suggests that while long-term investments generally have a positive impact on firm value, the effect becomes weaker as firm size increases. This could be due to larger firms facing diminishing returns from their long-term investments, possibly due to inefficiencies related to the scale of their operations. As firms grow larger, they may experience greater complexity in managing diverse investment portfolios, leading to reduced oversight or a diluted impact of those investments. This finding contrasts with the findings of Ibraheem (2019), who reported

that firm size plays a significant role in influencing firm value in larger firms. Additionally, larger firms might have more capital to invest in a wider variety of ventures, potentially leading to suboptimal diversification that harms overall performance.

The null hypothesis proposed that firm size does not significantly influence the effect of intangible assets on firm value, suggesting that intangible assets, such as brand value, intellectual property, or goodwill, have a uniform effect on performance regardless of firm size. The coefficient for the interaction term between Intangible Assets and Firm Size is 1.9958, with a p-value of 0.219. Since the p-value exceeds the 0.05 significance level, the study fails to reject the null hypothesis. This means that there is no statistically significant evidence to suggest that firm size moderates the impact of intangible assets on firm value. The positive coefficient of 1.9958 indicates a slight positive relationship between intangible assets and firm value, but the lack of significance suggests that this effect is not strong enough to be considered reliable. This finding opposes the findings by Olagunju and Moyo (2020) who documented a positive and significant effect of intangible assets on firm value. It could imply that the value derived from intangible assets does not vary substantially between smaller and larger firms, potentially because intangible assets have long-term, indirect, or diffuse effects that do not directly correlate with firm size. Additionally, the nature of intangible assets might be such that they provide value over time, and the size of the firm does not drastically alter how these assets contribute to overall financial outcomes.

5. CONCLUSION AND RECOMMENDATIONS

The study concluded that property, plant, and equipment (PPE) exert a negative and significant influence on firm value, implying that higher investments in tangible fixed assets may reduce value due to depreciation, inefficiency, or poor utilization. Long-term investments, however, positively and significantly enhance firm value, reflecting the benefits of strategic financial asset allocation. Intangible assets showed a negative but insignificant relationship, suggesting measurement or strategic inconsistencies. Firm size was found to negatively and significantly affect firm value, as larger firms often face operational complexities. Nonetheless, firm size positively and significantly moderates the PPE–firm value relationship, indicating that larger firms can offset PPE inefficiencies through economies of scale. Conversely, firm size negatively moderates the effect of long-term investments, suggesting diminishing returns as firms expand, while its moderating influence on intangible assets remains positive but insignificant, confirming that firm size does not meaningfully alter the impact of intangibles on firm value.

The study recommends that; first, Nigerian Exchange Group (NGX) and the Financial Reporting Council of Nigeria (FRCN) should mandate listed consumer goods firms to implement a strategic asset management framework. Firms should conduct periodic audits of Property, Plant, and Equipment (PPE), evaluate asset returns, and dispose of underutilized assets to improve efficiency and enhance firm value. Enforcing these measures will strengthen reporting standards and improve investor confidence in the Nigerian capital market.

Second, Securities and Exchange Commission (SEC) and the Central Bank of Nigeria (CBN) should encourage firms to expand and diversify long-term investments through internal investment policy committees that evaluate and monitor risk-return profiles. With proper regulatory guidance, firms can channel resources into productive ventures such as equity holdings and joint ventures, promoting long-term profitability and economic growth.

Third, National Office for Technology Acquisition and Promotion (NOTAP) and the Trademark and Patent Registry should drive better recognition and valuation of intangible assets like brand equity, intellectual property, and customer loyalty. Developing standardized reporting frameworks and capacity-building programs will help firms measure and leverage intangible value for competitive advantage.

Fourth, Corporate Affairs Commission (CAC) and NGX should promote efficient organizational restructuring among large consumer goods firms. By encouraging technology-driven systems, decentralization, and complexity audits, these institutions can help reduce inefficiencies and ensure that firm growth translates into improved productivity and performance.

Fifth, Manufacturers Association of Nigeria (MAN), Standards Organisation of Nigeria (SON), FRCN, and Advertising Regulatory Council of Nigeria (ARCON) should promote innovation, brand stewardship, and efficient asset utilization. Encouraging the use of ERP systems, predictive maintenance, and inclusion of non-financial metrics like brand perception and customer satisfaction in corporate reporting will enhance competitiveness and sustainability in the Nigerian consumer goods sector.

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