Investment in Capital Expenditure and the Financial Performance of Listed Consumer Manufacturing Firms in Nigeria

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ABSTRACT

This study examined Investment in Capital Expenditure and the Financial Performance of Selected Listed Consumer Manufacturing Firms in Nigeria. The researcher adopted the ex-post facto research design methodology for this study. This study uses secondary data from the annual reports of five (5) selected listed firm, sampled through the convenience sampling technique. The data obtained were time series from 2012-2023 and were analysed using the multiple linear regression analytical models. The findings revealed that Non-current Turnover Ratio (NATR) had a negative non-significant effect on the Return on Equity, Capital Intensity Ratio (CIR) had a negative significant on the Return on Equity, while combined analysis of both variables brought about a negative and significant effect on the Return on Equity of the selected firms. In conclusion, increasing the Capital expenditure Investment without corresponding increase in its efficiency to generate sales, or optimum efficiency with both metrics alongside poor profit-making strategies will result to poor returns for shareholders in the current year of the acquisition of capital expenditure and in future years of its usage. One of the recommendations directed to management was on the focus of improving overall asset efficiency and cost management. It involves not only optimizing the use of non-current assets but also ensuring that capital is deployed in a manner that maximizes returns.

Keywords: Capital Expenditure, Non-current Turnover Ratio, Capital Intensity Ratio, ROE

1.0   INTRODUCTION

The manufacturing sector in Nigeria has been experiencing a decline in productivity which is mostly due to external factors that cannot be regulated or controlled by the individual firms. These external factors include inadequate or epileptic power supply, trade liberalization, globalization, high exchange rate, policy inconsistency and Infrastructural deficit, amongst others. With escalating global and domestic challenges, the growth of the Nigerian manufacturing sector has been hampered, resulting in its underperformance when compared to other countries which has made it evidently necessary to reassess growth strategies within the sector and resolve critical concerns (KPMG, 2023). This retardation is evident in an effort by the manufacturing firms to close the gap of infrastructural deficit, which absolutely raises the cost of operating in Nigeria. The current state of all these external factors causes firms to improve on their internal measures (such as capital expenditure, reconstructing their capital structure, assessing the human efficiency level, and internal controls among others) to curb the effect from the external factors or serve as substitute for underlying deficits and hence calls for apt strategies, decision making and evaluation of the internal measures. The Consumer goods firms as a subset of manufacturing firms are also affected by the numerous external setbacks highlighted here as well as specific attributed factors that need to be evaluated to ensure that the firm maintains the going concern, thrives and achieves its objectives in the Nigerian business environment. Of such factor considered here, is the capital expenditure which contributes heavily to the cost of operation of this firm.

Uwah and Asuquo (2016) refer to Capital Expenditure as investments in long-term assets that provide benefits over multiple years. These investments primarily fund the replacement of deteriorating assets, improve the productivity of existing assets, or acquisition of modern technology to enhance the company's operations. When a company incurs capital expenditures, it records the costs as assets in the non-current assets category, such as property, plant, equipment, or intangible assets. Capital expenditure signal a company's growth path and can be an important indicator of its financial health and future performance (Callen *et al*., 2017). If a company fails to make investments in capital expenditure, the value of the company may decrease over time (Uwah and Asuquo, 2016). This can happen for several reasons, such as a lack of growth opportunities or a decline in the value of the company's existing assets.

Financial performance is an assessment of the firm's ability to utilize its assets in the generation of profits as well as maximize wealth. The common measure for gauging management performance is often through profitability. Profitability is the ability of companies to generate revenue which is greater than the direct and indirect cost incurred in generating the revenue. The definition is in line with the matching concept of accounting

which postulates the matching of revenue generated with cost incurred in generating the revenue to ascertain the value added. Profitability, according to Owolabi and Obida (2019), is the ability of a company to make profit from its key activities. The activities include the operating, investing, and financing that are tailored towards generating revenue and profit which triggers the going concern and survival of companies. The common indices for measuring profitability are return on asset, return on equity, return on investment and earnings per share.

In an effort to appropriately establish a balance in the use of capital expenditure, generation of revenue and profitability, firms have resorted to make more detailed disclosures about their capital expenditure decision during a period, through the statement of financial position and the notes to the financial statement, as well as the use of relevant ratios such as those mention earlier to examine and draw conclusions on the effect of capital expenditure on their financial performance.

1.1   Statement of the Problem

The Consumer goods manufacturing firm should experience an improvement in financial performance through strategic investments in capital expenditure (CAPEX). Investments in new facilities, technology, and equipment should lead to increased production capacity, efficiency, and product quality. These improvements should, in turn, drive revenue growth, market share expansion, and profitability. A well-planned and executed CAPEX strategy enhances the company's competitive advantage and long-term sustainability. Currently, Consumer goods manufacturing firms in Nigeria are faced with challenges in aligning their capital expenditure with optimal financial performance. Potential issues emanating from here include insufficient investment in critical area and misalignment from objectives. These challenges may stem mostly from regulatory hurdles and external inefficiencies, followed by budget constraints and internal inefficiency. As a result, these firms seem unable to fully capitalize on opportunities for growth and innovation. Even with an effort to make certain investment in capital expenditure, can it be said categorically that such investment has been efficiently used to yield its maximum value or result? The misalignment between capital expenditure and financial performance may lead to several negative consequences for these firms ranging from stagnant or declining profitability, loss of market share and financial strain.

Several researches have been conducted to examine the relationship between capital expenditure and financial performance, but these have led to conflicting viewpoints and ambiguous conclusions. Studies by Aiyesan and Salemcity (2023) found a link between capital expenditure and financial performance. Contrarily, Kim *et al.* (2021) showed no statistically significant correlation between capital expenditure and financial performance,

while Thomya *et al.* (2023) found that capital expenditure has a negative and significant relationship with financial performance.

1.2   Objective of the Study

The main objective of the study was to examine investment in capital expenditure and the financial performance of manufacturing firms in Nigeria.

1.3   Research Hypothesis

H$_0$1:   Non-current Asset Turnover Ratio and Capital Intensity Ratio have no combined significant effect on the Return on Equity (ROE) of manufacturing firms in Nigeria.

1.4   Significance of the Study

The study on capital expenditure and financial performance of manufacturing firms in Nigeria holds significant benefits for various stakeholders. This research provides valuable insights for policymakers and government officials in formulating economic policies related to manufacturing industries. Understanding the relationship between capital expenditure and financial performance can aid in designing policies and implementation measures that promote investment and operational activities in the manufacturing sector, which is crucial for economic growth and industrial development in Nigeria. Additionally, policymakers can use the findings to assess the effectiveness of existing policies and make necessary adjustments to enhance the competitiveness of manufacturing firms.

Shareholders and investors rely on financial performance indicators to make informed decisions regarding their investments. The study helps them understand how capital expenditure influences the financial performance of manufacturing firms in Nigeria. Armed with this knowledge, shareholders and investors can better assess the investment potential of manufacturing companies, allocate their resources effectively, and mitigate risks associated with their investments (Etim & Idorenyin, 2021).

The public, including consumers and employees, are affected by the performance of manufacturing firms. A robust manufacturing sector contributes to job creation, economic stability, and availability of goods and services in the market. By understanding the factors that influence the financial performance of manufacturing firms, the public can gauge the health of the sector and its impact on the overall economy.

Researchers in academia and other institutions benefit from studies like this as they contribute to the body of knowledge in finance, economics, and industrial development. The findings can serve as a basis for further research and exploration into related areas, leading to a deeper understanding of the dynamics between capital expenditure and financial performance in emerging economies like Nigeria.

2.0   REVIEW OF RELATED LITERATURE

2.1   Conceptual Review

The conceptual relationships between the variables are depicted in Figure 2.1.
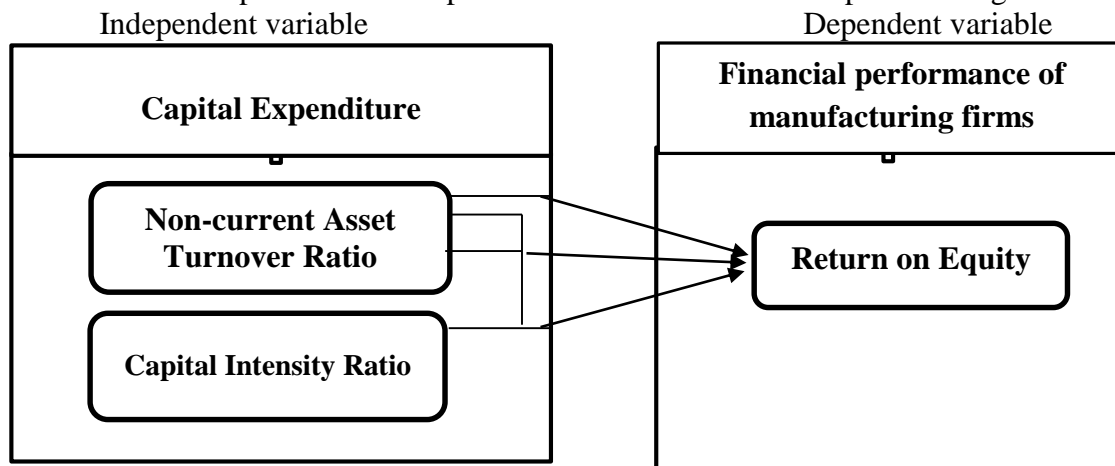
Independent variable   Dependent variable

Figure 2.1: Conceptual framework of variables
Source: *Researchers'* Conceptualization (2024)

2.1.1   Financial Performance

Financial performance is a multifaceted concept crucial for assessing the health and effectiveness of an organization's financial activities. It encompasses various elements that provide insights into the overall financial well-being and efficiency of a company. According to Chen and Dodd (2020), financial performance can be understood as the ability of a firm to generate profits and create value for its shareholders over a specific period. This concept goes beyond mere profitability to include other essential indicators such as liquidity, solvency, efficiency, and growth potential (Biddle and Hilary, 2019). The financial performance of a firm can be determined based on the aforementioned indicators. The profitability ratios like Return on Assets (ROA) and return on equity (ROE), measures the company's ability to generate profits relative to its assets and shareholders' equity, respectively. Liquidity ratios such as the current ratio and quick ratio assess the company's short-term ability to meet its financial obligations (Brigham and Ehrhardt, 2019). Solvency ratios like the debt-to-equity ratio gauges the company's long-term financial stability and its ability to repay debts (Ross *et al.,* 2020). Efficiency ratios like asset turnover ratio and inventory turnover ratio evaluates how effectively the company utilizes its assets and manages its inventory to generate sales and profits (Gitman *et al.,* 2021). The issues emanating from the concept of financial performance include the importance of aligning

financial goals with broader organizational objectives, the need for transparency and accuracy in financial reporting, and the impact of external factors such as economic conditions and regulatory changes (Palepu *et al.,* 2020). Additionally, the increasing emphasis on sustainability and corporate social responsibility has led to the integration of Environmental, Social, And Governance (ESG) factors into assessments of financial performance (Tao and Jiangjun, 2023). The growing importance of environmental, social, and governance (ESG) factors in assessing organizational performance portrays a new path to the assessment of firms' well-being. Investors and stakeholders increasingly consider sustainability initiatives, corporate social responsibility practices, and ethical governance standards when evaluating financial performance.

2.1.2 Profitability
Profitability is a fundamental concept in business that measures a company's ability to generate earnings relative to its expenses over a specific period. It is a key indicator of financial health and performance, influencing investment decisions, stakeholder perceptions, and overall company strategy. Profitability encompasses various elements, including gross profit margin, net profit margin, return on assets (ROA), return on equity (ROE), and return on investment (ROI). Gross profit margin reflects the percentage of revenue remaining after deducting the cost of goods sold, while net profit margin measures the percentage of revenue remaining after subtracting all expenses, including operating, interest, and tax expenses. ROA evaluates how efficiently a company utilizes its assets to generate profit, while ROE assesses the return generated for shareholders' equity. ROI calculates the return earned on a particular investment relative to its cost.

New dimensions towards profitability have emerged in recent years, driven by advancements in technology, changes in consumer behavior, and shifts in the business landscape. One notable trend is the increasing emphasis on sustainability and environmental responsibility, with companies integrating environmental, social, and governance (ESG) factors into their profitability assessments and leveraging data analytics, artificial intelligence, and automation to gain insights into consumer preferences, streamline operations, and improve decision-making, ultimately enhancing profitability. Moreover, evolving consumer preferences and behaviors, influenced by factors such as health consciousness, ethical consumption, and digital connectivity, present new avenues for revenue generation and market differentiation. Understanding these trends and adapting strategies accordingly is essential for companies to maintain and improve profitability in an ever-changing business environment.

Capital expenditure (CAPEX) significantly influences profitability by impacting both revenue generation and cost management. Investments in capital assets, such as infrastructure, equipment, and technology, can enhance operational efficiency, productivity,

and product quality, leading to revenue growth and margin expansion. For example, upgrading production facilities can increase output capacity, reduce manufacturing costs, and improve product consistency, thereby boosting profitability. Similarly, investments in marketing and distribution channels can drive brand visibility, customer acquisition, and sales growth, contributing to overall revenue and profitability. However, the impact of CAPEX on profitability also depends on the effectiveness of investment decisions, the timing of expenditures, and the alignment with strategic objectives. Poorly planned or excessive CAPEX can lead to overcapacity, asset underutilization, and financial strain, ultimately undermining profitability. Therefore, companies must carefully evaluate the potential returns and risks associated with capital investments to ensure they contribute positively to profitability over the long term.

2.1.3   Return on Equity (ROE)

Return on Equity (ROE) is a fundamental financial metric that measures a company's profitability and efficiency in generating returns for its shareholders' equity investment (Brealey *et al.,* 2021). It represents the percentage of net income earned relative to the shareholders' equity, indicating how effectively the company is utilizing its equity capital to generate profits. ROE is calculated by dividing net income by shareholders' equity and is expressed as a percentage. The elements of ROE include net income, which represents the company's total profits after deducting expenses and taxes, and shareholders' equity, which represents the shareholders' ownership stake in the company's assets after accounting for liabilities (Ross *et al.,* 2022). ROE reflects the company's ability to generate profits from its assets while considering the leverage effect of equity financing.

2.1.4   Capital Expenditure (CAPEX)

Capital expenditure (CAPEX) refers to the funds a company invests in acquiring, maintaining, or upgrading physical assets to improve or expand its operations, generating future benefits, or extending the useful life of existing assets (Berk and DeMarzo, 2021). Elements of CAPEX include investments in Property, Plant, and Equipment (PPE), such as machinery, buildings, vehicles, and technology infrastructure. These investments are typically long-term in nature and are critical for sustaining and enhancing the company's competitive position, operational efficiency, and growth prospects. These metrics for accessing CAPEX include the Capital Intensity Ratio, the Non-current Asset Turnover Ratio, the CAPEX growth rate, the CAPEX sustainability score, CAPEX allocation efficiency, and Employee Productivity Return on Investment (EPROI) amongst others.

Recent discoveries based on research about the concept of Capital Expenditure have resulted in an increased emphasis on innovation, digital transformation, and sustainability initiatives. The integration of environmental, social, and governance (ESG) considerations

into CAPEX decisions is gaining traction, with companies prioritizing investments in renewable energy, energy efficiency, and green infrastructure to mitigate environmental risks, comply with regulations, and meet stakeholder expectations (Khan and Liu, 2023).

The link between CAPEX and financial performance is significant, as CAPEX plays a crucial role in driving revenue growth, profitability, and shareholder value (Ross *et al.,* 2022). Strategic investments in CAPEX can lead to increased production capacity, enhanced product quality, expanded market presence, and improved operational efficiency, which contribute to revenue growth and margin expansion. Also, well-executed CAPEX projects can generate positive returns on investment (ROI) over time, boosting profitability and return metrics such as return on assets (ROA) and return on equity (ROE). However, the impact of CAPEX on financial performance depends on factors such as the effectiveness of project execution, market demand dynamics, competitive landscape, and overall economic conditions.

2.2   Theoretical Framework

The connection between capital expenditure and the financial performance of firms cannot be determined effectively without taking theories into view. For this cause, the Resource-based view theory is considered as a pillar of the study.

2.2.1   Resource-Based View Theory

The Resource-Based View (RBV) theory was propounded by Jay B. Barney in 1991. This theory focuses on the internal resources and capabilities of a firm as sources of competitive advantage and superior performance. According to RBV, firms can achieve sustained competitive advantage by acquiring and leveraging valuable, rare, inimitable, and non-substitutable resources and capabilities (Barney, 1991). The theory suggests that resources such as technology, human capital, brand reputation, and organizational culture are key determinants of a firm's ability to create value and outperform competitors.

Further developments in the RBV theory have expanded its scope to include dynamic capabilities and resource orchestration. Scholars such as Teece *et al.* (1997) introduced the concept of dynamic capabilities, which refers to a firm's ability to adapt, integrate, and reconfigure its resources and capabilities in response to changing market conditions and external regulations or factors. Additionally, the notion of resource orchestration emphasizes the importance of effectively combining and coordinating diverse resources to achieve strategic objectives. Despite its widespread adoption, the RBV theory has faced criticism from various authors. Some scholars argue that RBV lacks a clear framework for identifying and measuring resources and capabilities, making it difficult to operationalize in practice (Priem and Butler, 2001). Others contend that RBV overlooks the role of external factors such as market structure, industry dynamics, and macroeconomic

trends in shaping firm performance (Powell, 2001). Additionally, RBV has been criticized for its static nature, as it tends to focus on existing resources rather than the process of resource development and renewal (Teece, 2007).

RBV suggests that capital expenditure decisions should be aligned with a firm's strategic objectives and resource endowment to maximize value creation. For Nigerian manufacturing firms, investments in physical infrastructure, technology upgrades, and skill development programs can enhance operational efficiency, product quality, and market competitiveness. By leveraging these resources effectively, manufacturing firms can improve their financial performance, increase market share, and sustain long-term growth despite the ever-changing business pace and external factors.

Table 1: Summary of Empirical Review

S/N	Authors	Country	Title	Methodology	Findings
1	Eleba and Tubotamuno-Ojas (2024)	Nigeria	Capital expenditure decisions and market value of quoted food and beverages firms in Nigeria	Panel data methodology was employed, and analysis made through regression analysis.	The result showed that the proxies of capital expenditure decision explained 94.4 percent variation in market value of quoted food and beverages manufacturing firms in Nigeria.
2	Miar and Basrowi (2023)	Indonesia	Analysis of the effects of capital expenditure and supply chain on economic growth and their implications on the community welfare of districts and cities in central Kalimantan province	The researcher analyzed the original sample data from 2014 to 2022 using a path analysis approach.	The findings revealed significant positive relationships between capital expenditure, economic growth, and community welfare.
3	Aiyesan and Salemcity (2023)	Nigeria	Human capital expenditure and financial performance of selected manufacturing firms in Nigeria.	*Ex-post facto* research design was employed, and the d analyzed using Panel-regression technique.	The researcher found a positive significant connection linking Staff training cost, Salaries and wages and Retirement benefit cost on financial performance.
4	Thomya *et al.* (2023)	Thailand	Capital Expenditure and Future Firm Performance: Evidence from Firms Listed on the Stock Exchange of Thailand	A regression analysis was conducted on a sample (n=475) of registered companies listed on the Stock Exchange of Thai (SET) from 2000-2016.	The result showed a negative relationship between capital expenditure and future firm performance, as measured by return on assets (ROA) and dividends. Notably, this negative relationship was found to be statistically significant across the board, first for all companies and second for a unique subset of larger companies.

5	Enekwe *et al.* (2023)	Nigeria	Effect of Non-Current Assets on The Financial Performance of Manufacturing Firms in Nigeria	The researcher utilized an *ex-post facto* research design and analysed data using the panel ordinary least squares (OLS)	The study revealed a positive relationship between capital expenditure and financial performance indicators.
6	Purushothaman *et al.* (2022)	India	A Study on Impact of Capital Expenditure and Leverage Ratio on Firm performance	The data were analyzed using a linear regression model.	The statistical analysis showed that the capital expenditure is positively correlated whereas the leverage ratio and size of the firm have a negative correlation to the firm performance.
7	Siti *et al.* (2022)	Indonesia	The effect of fixed asset turnover, capital structure, dividend policy and company size on the value of property and real estate companies listed on the Indonesia stock	The multiple linear regression analytical method was employed to arrive at the results.	The results of the study show that the variables of non-current asset turnover, capital structure, dividend policy partially have a negative and significant effect on firm value in property and real estate the Indonesia Stock Exchange for the 2018-2020 period.
8	Zhang and Li (2022)	China	The effect of capital expenditure on financial performance during economic downturns: A comparative	The researcher employed a comparative analysis of firms' financial data before, during, and after economic downturns.	The study revealed that firms that continued to invest in CAPEX during economic downturns outperformed their peers in terms of financial performance.
9	Eldina and Wahyu (2022)	Indonesia	Analysis of Capital Structure and CAPEX: It's Effect on ROE of Mining Companies	The path analysis methodology was employed.	The results showed that partially, the debt-to-equity ratio variable had a negative effect on ROE while the debt ratio variable had a positive effect on Return on Equity (ROE) and the Capital Expenditure (CAPEX) variable had no effect on ROE. The results of the study simultaneously show that DAR, DER and CAPEX have a positive effect on ROE
10	Lee, and Kim (2021)	Korea	Relationship between capital expenditure and financial performance: A study of Nigerian construction firms	The researcher utilized a panel data collection method and a regression analysis of technological firms over a five-year period.	The study showed a positive and significant relationship between CAPEX and financial performance metrics, such as return on assets and return on equity

11	Ogunleye and Adeoye (2021)	Nigeria	Impact of capital expenditure on financial performance: Evidence from Nigerian banks.	The researcher conducted a quantitative analysis using financial data from Nigerian banks from 2007-2019 and the researcher adopted the correlation analytical method to arrive his findings.	The research found a significant positive relationship between capital expenditure and financial performance metrics, such as return on equity and asset quality.
12	Oladele and Adebisi (2020)	Nigeria	Determinants of capital expenditure and its impact on financial performance: Evidence from Nigerian manufacturing firms	The researcher employed a mixed-method approach, combining survey data with financial data of manufacturing firms in Nigeria and a	It also found a positive relationship between CAPEX and financial performance indicators.
13	Kim *et al.* (2020)	United States of America	Do capital expenditures influence earnings performance: Evidence from loss-making firms.	The researcher used a sample of 24030 firm-year observations from 2006-2015 to conduct a comparative analysis	They found that loss making firms show different patterns of capital expenditures than profit making firms.
14	Eneh and Okwo (2020)	Nigeria	Response of firm productivity to human capital expenditures in oil and gas firms in Nigeria	Research design adopted was *ex-post facto* design while analytical tools employed were descriptive statistics and Ordinary Least Squares (OLS) panel regression analysis technique.	The researcher found a significant positive relationship between capital expenditure and financial performance metrics, such as return on equity and asset quality.
15	Samarajeewa and Perera (2020)	Colombia	The Impact of Capital Expenditure on Working Capital Management: Evidence from the Listed Manufacturing Companies in the Colombo Stock Exchange (CSE)	The pooled least squares regression analysis model was used analyzing the relationship between Capital expenditure and working capital management.	A significant negative relationship has been identified which implies that these firms do not strive increasing the balance of most liquid assets when faced with capital expenditure decisions
16	Vanja *et al.* (2020)	Serbia	Capital investments and manufacturing firms' performance: Panel-data analysis	The panel-data and regression analysis was employed for this research.	The result of the research showed that capital investments have statistically significant negative effect on short term performance of the analyzed firms, while controlling for time-fixed effects and certain internal factors.

17	Jasper, *et al.* (2019)	India	Energy performance and capital expenditures in manufacturing industries	The researcher employed a comparative analysis on the energy consumption and efficiency of firms in the Netherlands' manufacturing industries before and after large capital expenditures over the 2000 to 2008 period.	Findings from the study revealed that firms increase energy consumption when experiencing a simultaneous investment. However, after large capital expenditures, energy efficiency increases.
18	Sharma (2019)	India	Capital expenditure and financial performance in emerging markets: Evidence from cross-sectional analysis.	The researcher employed a longitudinal and regression analysis of financial data from manufacturing firms over a five-year period.	The findings revealed a positive relationship between capital expenditure and financial performance, with increased CAPEX leading to higher profitability and shareholder value.
19	Simeon *et al.* (2019)	Kenya	Capital Intensity and Financial Performance of Manufacturing Companies Listed at Nairobi Securities Exchange.	The researcher adopted an explanatory research design, and the regression and Pearsons's correlation coefficient analysis method were adopted to arrive at the findings.	The findings indicated that capital intensity has a positive insignificant association with financial performance
20	Uwah (2019)	Nigeria	Capital expenditure decisions and long-term value of the firm: evidence from Nigerian manufacturing companies.	The *ex post facto* and correlational research designs were adopted for the study.	With the aid of regression analyses, the findings revealed that capital expenditure decisions had a significant relationship with long term value of manufacturing firms.

Source: Researchers' Compilation (2024)

2.4   Gap in Literature

The researcher examined the effect of investment in capital expenditure and financial performance of manufacturing firms Nigeria. Contrary to several research carried out in this area on case study either a single firm or a particular nation, this study takes into consideration, selected quoted manufacturing firms to specifically give result of the impact of the independent variables on the firm's performance while concentrating on the consumer manufacturing firms in Nigeria. Also, this study was carried out taking a different dimension to the measure of profitability where the contributing factors are from the asset structure. Where Return on Asset has constantly been used to identify profitability in the context of operational efficiency, Return on Equity is used instead, to identify how shareholder's wealth is been maximized from the investment in capital expenditure projects. The researcher employed the techniques of ratios to define the independent variables as opposed to the use of capital expenditure figures from the financial statement of the firms and the component of non-current asset used to compute the ratios were basically those that met the

operational definition of capital expenditure, hence the use of Property, Plant and Equipment (PPE) and Right of Use (ROU) asset. Lastly, the independent variables of the study were analysed individually against the dependent variable as well as together against the dependent variable contrary to the work of Siti *et al.* (2022) that was based on general analysis only (multiple regression).

3.0   METHODOLOGY

3.1   Research Design
The research design employed in this research was the *ex-post facto*.

3.2   Population of the Study
The population consisted of twenty-one (21) manufacturing companies (consumer goods) as at 31st December, 2023 (NGX, 2023).

3.3   Sample size and Sampling Technique
The sample of the listed manufacturing companies in Nigeria was selected using a convenience sampling technique. Five (5) manufacturing firms were drawn from the total consumer goods manufacturing companies on the floor Nigerian Exchange Group. The Manufacturing companies sampled were suitable and easy for the researcher to derive the unique, necessary information needed to conduct the study. The companies sampled based on the afore-mentioned technique were shown in Table 3 below:

Table 3: Selected consumer manufacturing firms

S/N	Names of the consumer manufacturing firms	Ticker
i.	Champion Breweries Plc.	CHAMPION
ii.	Nestle Nigeria Plc	NESTLE
iii.	Honeywell Flour Mills Plc	HONYFLOUR
iv.	National Salt Company Nigeria (NASCON) Plc	NASCON
v.	Nigerian Enamelware Plc	ENAMELWA

Source: Researchers' Compilation (2024)

3.4   Sources and Nature of Data
The data collected, presented, analyzed and discussed were from secondary sources. The data used in the study were obtained from the annual report of the selected listed manufacturing firms. This research specifically made use of data on Non-current Asset Turnover Ratio (NATR); Capital Intensity Ratio (CIR) and Return on Equity (ROE). The sources of data collection from the financial statements included the statement of Profit/loss

and other comprehensive income from which the data on Revenue and Profit after tax and preference dividend were derived, the statement of financial position from which the non-current asset (specifically, the Property, Plant and Equipment(PPE) and Right of Use (ROU) asset) and current liability data were obtained, and the notes to the financial statement of the selected manufacturing firm that served as a guide for computing the ratios needed, for the period 2012 to 2023, both years inclusive.

3.5   Method of Data Collection

The data were obtained from the annual report of the quoted companies on the Nigerian Exchange Group (NGX). The data obtained were time series data from 2012 to 2023, both years inclusive.

3.6   Measurement and Description of Variables

Table 3: **Measurement and description of variables**

Variables	Description	Measurement	Source	*A priori* expectation
Return on Equity	ROE (dependent variable)	Profit after Tax and preference dividend/ Shareholders' equity.	Eldina and Wahyu (2022)	
Non-current Asset Turnover Ratio	NATR (independent variable)	Revenue/Net non-current asset	Enekwe *et al.* (2023)	+
Capital Intensity Ratio	CIR (independent variable)	Total non-current asset/Revenue	Simeon *et al.* (2019)	-

Source: Researchers' Compilation (2024)

Financial Performance being the dependent variable was measured through profitability and by the metrics Return on Equity (ROE). Independent variable of the study was proxied through Non-current Asset Turnover Ratio (NATR) and Capital Intensity Ratio (CIR).

3.7   Model Specification

The model used in this study was based on the description of the effect of the independent variable on the dependent variable of this research work. In other words, the simple and multiple linear regression models were adopted. It is given as:

$$Y = \beta o + \beta_1 X_1 + e \qquad \qquad \textit{Equation 3.1}$$
$$Y = \beta o + \beta_2 X_2 + e \qquad \qquad \textit{Equation 3.2}$$
$$Y = \beta o + \beta_1 X_1 + \beta_2 X_2 + e \qquad \qquad \textit{Equation 3.3}$$

Where;
Y = financial performance (dependent variable)
X = Capital Expenditure (explanatory/independent variable)

Explicitly, the equation was defined as:

Financial performance = f (Capital expenditure) + e

Therefore, the broad model for this study was modified as;

ROE_{it}	=	$\beta_0 + \beta_1 NATR_{it} + e_{it}$	*Equation 3.4*
ROE_{it}	=	$\beta_0 + \beta_2 CIR_{it} + e_{it}$	*Equation 3.5*
ROE_{it}	=	$\beta_0 + \beta_1 NATR_{it} + \beta_2 CIR_{it} + e_{it}$	*Equation 3.6*

Where;

ROE_{it}	=	Return on Equity of firm i in period t
$NATR_{it}$	=	Non-current Asset Turnover Ratio of firm i in period t
CIR_{it}	=	Capital Intensity Ratio of firm i in period t
β_0	=	Intercept or regression constant
$\beta_1, \beta_2, \beta_3$	=	Regression coefficients to be estimated for firm i in period t
e	=	Stochastic error term.

3.8   Method of Data Analysis/Statistical Tools

The data were analyzed based on the Ordinary Least Square (OLS) of the multiple regression models with the E-views 12.0 statistical tool. Regression analysis is a statistical process for estimating the relationships and effects among variables. It can be used to assess the strength of the relationship between variables and for making predictions based on the observed data. Regression analysis helps us understand the relationship between a dependent variable and one or more independent variables and the effect of the independent variable on the dependent variable.

3.9   Decision Rule

Based on the hypothesis testing with significance level approach, the study's hypotheses were tested at 5% level of significance. The decision rule is to accept the null hypothesis if the probability value of the coefficient of F-statistics is greater than 0.05, in other, words reject the alternative hypothesis. Otherwise, Reject the null hypothesis if the probability value of the coefficient of t-statistics is less than 0.05, in other words, accept the alternative hypothesis.

4.1   Data Analysis

The various data collected by the researcher for this study were analyzed using appropriate statistical tools to arrive at the results. These were shown accordingly.

4.2   Descriptive Statistics of the Variables

Table 4 shows the descriptive statistics of the variables (Return on Equity, Non-current Asset Turnover ratio, and Capital Intensity Ratio) used in this study. The descriptive

statistics were mean and median for the measure of central tendency, standard deviation for the measure of dispersion, Skewness, and kurtosis for the measure of normality.

Table 4: Descriptive Statistics of the Variables

	ROE	NATR	CIR
Mean	0.17808	6.225421	0.933633
Median	0.10222	0.91113	0.624577
Maximum	1.87281	379.9017	3.241726
Minimum	-2.9792	-33.43371	0.200702
Std. Dev.	0.62337	50.13976	0.736226
Skewness	-1.61349	7.064126	1.479327
Kurtosis	13.4151	53.2	4.721493
Jarque-Bera	297.221	6799.12	29.29291
Probability	0.0000	0.0000	0.0000
Sum	106.8481	373.5253	56.01798
Sum Sq. Dev.	22.9272	148325.7	31.97968
Observations	60	60	60

Source: *Researchers'* Computation (2024)

From Table 4, the Return on Equity had a minimum value of -2.9792 and a maximum value of 1.87281, a mean value of 0.17808, a median of 0.10222, and a standard deviation of 0.62337, which indicated that the Return on Equity values were more spread out from its mean value. The minimum value and maximum value showed that Return on Equity averaged 0.17808. Also, the measure of normality through Skewness indicated that the Return on Equity with the Skewness value of -1.61349, is negatively skewed, that is having more lower value than the mean value while the kurtosis value of 13.4151 indicated that the Return on Equity is leptokurtic; having a peaked curve which showed more higher values than the mean value of 0.17808 hence the presence of outliers.

The Non-current Asset Turnover Ratio had a minimum value and maximum value of -33.43371 and 379.9017 which indicated the lowest and highest value within the set of data respectively, a mean value of 6.225421, and a median of 0.91113 which indicated the average value and the middle value respectively, of the set of data, also a standard deviation of 50.13976; which indicated that the Non-current Asset Turnover Ratio values were more spread out from its mean value. The minimum value and maximum value showed that Non-current Asset Turnover Ratio averaged 6.225421. Also, the measure of normality through Skewness indicated that Non-current Asset Turnover Ratio with the Skewness value of 7.064126, is positively skewed, that is having more higher values than the mean value while the kurtosis value of 53.2 indicated that the Non-current Asset Turnover Ratio was

leptokurtic; having a peaked curve which showed more higher values than the mean value of 6.225421, hence the presence of outliers.

Capital Intensity Ratio had a minimum value and maximum value of 0.200702 and 3.241726 which indicated the lowest and highest value within the set of data respectively, a mean value of 0.933633 and a median of 0.624577 which indicated the average value and middle value respectively, of the set of data, also a standard deviation of 0.736226; which indicated that the Capital Intensity Ratio values were less spread out from its mean value. The minimum value and maximum value showed that Capital Intensity Ratio averaged 0.933633. Also, the measure of normality through Skewness indicated that Capital Intensity Ratio with the Skewness value of 1.479327, is positively skewed, that is having more higher values than the mean value while the kurtosis value of 4.721493 indicated that the Capital Intensity Ratio was leptokurtic, having more higher values than the mean value of 0.933633.

4.3   Test of Hypothesis

4.3.1   Hypothesis
The null hypothesis stated that Non-current Asset Turnover Ratio (NATR) and Capital Intensity Ratio (CIR) have no significant effect on the Return on Equity (ROE) of manufacturing firms in Nigeria.

Table 5: Multiple Regression Results of Hypothesis Three

Dependent Variable: ROE
Method: Least Squares
Date: 07/10/24   Time: 23:05
Sample: 60
Included observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.550739	0.11797	4.668467	0.0000
NATR	-0.000299	0.001455	-0.205502	0.8379
CIR	-0.397155	0.09909	-4.008033	0.0002
R-squared	0.219959	Mean dependent var		0.17808
Adjusted R-squared	0.192589	S.D. dependent var		0.623374
S.E. of regression	0.56014	Akaike info criterion		1.727445
Sum squared resid	17.88412	Schwarz criterion		1.832163

Log likelihood	-48.82336	Hannan-Quinn criter.	1.768406
F-statistic	8.03654	Durbin-Watson stat	1.811404
Prob(F-statistic)	0.000842		

Source: *Researchers'* Computation (2024)

From the results in Table 5, the regression line can be written as follows:

$ROE = 0.550739 + (-0.000299) NATR + (-0.397155)CIR + e$.

From the above equation, it can be inferred that Return on Equity should have grown at rate of 55.0739 % from period 2012-2023, being that Non-Current Asset Turnover Ratio and Capital Intensity Ratio were held at constant. Also, the coefficient values; -0.000299, -0.397155 of the independent variables signifies the same negative effect, on the Return on Equity of the sampled firms, from period 2012-2023. This implied that as NATR and CIR increases over time, the result will be seen as a decrease in ROE by 0.0299% and another decrease in ROE by 39.7155%, respectively. The regressed estimation in Table 4.4 depicts that a combined effect of the measures of NATR and CIR have a dual negative effect on the Return on Equity of the sampled firms.

Furthermore, the R-squared result of the study indicated that a combined effect of the Non-current Asset Turnover Ratio and Capital Intensity Ratio contributes to about 21.9959% of total changes in the Return on Equity of the sampled firm within the stipulated period. Finally based on the applied test of hypothesis, the p-value of this hypothesis was 0.000842 and hence gave a statistically significant result. Therefore, the null hypothesis of the study which stated that Non-current Asset Turnover Ratio and Capital Intensity Ratio have no combined significant effect on the Return on Equity (ROE) of manufacturing firms in Nigeria was rejected.

4.4   Discussion of the Findings

The findings of the study revealed that Non-current Asset Turnover Ratio has a non-significant and negative effect (Coeff. = -0.000136{0.9339}) on the Return on Equity of the sampled firms for the period 2012-2023 and as such 1% increase in the independent variable causes the dependent variable to decrease by 0.0136%, this represents an abnormal relationship between the variables study, however not analysed as being statistically significant; likely to have occurred by chances, due to the P-value of 0.9339 during the period of the study. The result implied that an increased Capital expenditure through NATR will not really result to increased ROE for manufacturing firms as the proxy only measures efficiency in generating sales and not profitability, hence if profit margins are low, increased revenue might not significantly impact profit after tax and thus not boost ROE also where there are higher operational expenses disproportional to increased level of sales,

net income also will not increase hence affecting ROE and high fixed cost can also reduce profitability despite efficient use of non-current assets. This result does not align with the findings of Enekwe *et al.* (2023) whose study showed that non-current asset has a positive but insignificant effect on the financial performance of listed manufacturing firms in Nigeria. This difference can be traced to the scope of the studies. Where Enekwe *et al.* (2023) was concerned with all variables that constitute total non-current asset, this study focused on those concepts that meet the operational definition of capital expenditure in the study.

The findings of the study revealed that Capital Intensity Ratio had a significant and negative effect (Coeff. = -0.396586{0.0002}) on the Return on Equity of the sampled firms for the period 2012-2023 and at such 1% increase in the independent variable causes the dependent variable to decrease by 39.6586%, this represents a normal relationship between the variables of the study and it was also analysed as being statistically significant; unlikely to have occurred by chance due to the P-value of 0.0002, during the period of the study. It suggests that an increased Capital intensity ratio will also not result to increased ROE overtime, because the proxy indicates significant investment in asset but does not necessarily reflect the efficient use of these asset.

While capital investments can lead to long-term growth, they might not immediately generate proportional revenue, hence affecting profitability and thus return on Equity also the high cost involved in maintaining the assets overtime can reduce Profit after tax hence affecting Return on Equity. If the assets are underutilized or inefficiently used, the expected revenue and profit will not materialize, resulting into weaker relationship with ROE. This result aligns with the findings of Vanja *et al.* (2020) whose study showed that capital investment has a negative and significant effect on the financial performance of Nairobi listed manufacturing firms.

The findings revealed that Non-current Asset Turnover Ratio and Capital Intensity Ratio has a statistically significant and dual negative effect (Coeff. = (-0.000299){0.8379} + (-0.397155){ 0.0002}) on the Return on Equity of the sampled firms for the period 2012-2023 and at such 1% increase in the independent variables causes the dependent variable to decrease by 0.0299% and 39.7155% respectively and analysed as being statistically significant due to the combined P-value of 0.000842 during the period of the study. The findings revealed significant issues in management of asset and capital utilization. When NATR is negative, it reflects inefficient use of assets to generate sales. This inefficiency, when combined with a high CIR(indicating that a large amount of capital is required for operations), points to a broader issue where assets are neither generating sufficient revenue nor are capital investments being effectively utilized also if assets growth (due to an increase in capital intensity ratio) out spaces revenue growth (even if there is an increase in noncurrent asset turnover ratio), the increased cost associated with the larger asset base might not be fully offset by the revenue,

leading to lower profitability. This result aligns with the findings of Elmika *et al.* (2024) whose study showed that capital investment ratio when compared with non-current asset turnover ratio using the multiple regression model have a negative and significant effect on the financial performance of manufacturing firms in Kenya.

5.1   CONCLUSION

This present study examined the impact of investment in Capital expenditure on the financial performance of consumer manufacturing firms in Nigeria. The study covered 60 observations for 5 selected listed firms from the period (2012-2023) and placed more emphasis on the Property Plant and Equipment and Right of Use of an Asset component for the investment in capital expenditure and its impact on financial performance. The investment in capital expenditure was assessed through non-current asset turnover ratio and capital intensity ratio while financial performance was assessed from Return on Equity.

The findings revealed that Non-Current Asset Turnover Ratio (NATR) did not significantly by way of statistics impact the Return on Equity of selected consumer goods manufacturing firms in Nigeria while Capital Intensity Ratio (CIR) impacted significantly, also a joint effect of the two brought about a significant effect or impact on Return on Equity (ROE). However, the directions of these effects suggest issues that need to be addressed aptly. The Non-Current Asset Turnover Ratio did not align with the *a priori* expectation while the Capital Intensity Ratio aligned with the *a priori* expectation however indicating a critical or unfavorable conditions for the shareholders. Specifically, increasing the Capital expenditure Investment without corresponding increase in its efficiency to generate sales, alongside poor profit-making strategies will result to poor returns for shareholders in the current year of the acquisition of capital expenditure and in future years of its usage.

5.2   RECOMMENDATIONS

Based on the findings, the following recommendations were made.
 i.   Management should focus on improving overall asset efficiency and cost management. This involves not only optimizing the use of non-current assets but also ensuring that capital is deployed in a manner that maximizes returns. Management should invest in processes that enhance asset productivity and reduce unnecessary capital expenditure as well as engage in regular evaluation of the efficiency in the use of the capital expenditure. By maintaining a balanced approach to asset acquisition and utilization, the company can improve profitability and shareholder value.
 ii.   Policymakers should create an enabling environment that supports efficient asset utilization and prudent capital management in consumer goods

manufacturing firms. Improving infrastructure such as transportation and energy supply can help firms operate more efficiently.

iii. Shareholders should engage actively with the management of their invested companies to ensure that strategic initiatives are in place to address the combined negative effects of high NATR and CIR on ROE. They should advocate for transparency and accountability in how assets are managed, and capital is allocated. Regular updates on the company's strategies to improve asset turnover and reduce capital intensity should be requested. By supporting and monitoring these initiatives, shareholders can help drive better financial performance.

5.3   Business Policy Implications of the Findings

Practical business policy implications based on the findings include:

i. Selective Capital Expenditure: Manufacturing firms will need to adopt a more selective approach to capital expenditures. Rather than broadly increasing investments in non-current assets, they should focus on investments that demonstrate a potential to enhance profitability.

ii. Asset Utilization Monitoring: Ongoing monitoring and optimization of asset utilization should be established. Since inefficient use of assets is linked to lower ROE, continuous assessment of asset performance is critical.

iii. Optimization of Capital Intensity: Firms need to optimize their capital intensity by ensuring that capital investments are directly tied to improvements in operational efficiency and profitability. This can be done by Reevaluate current capital projects to determine if they are yielding the expected benefits. Consider downsizing or delaying capital-intensive projects that do not directly contribute to increased profitability. Focus on investments that lower operational costs, such as automation or energy-efficient technologies.

iv. Innovation in Revenue Generation: To counteract the negative effects of high capital intensity, companies should innovate in revenue generation, finding new ways to monetize existing assets or expand into higher-margin products and services.

v. Scenario Planning and Risk Management: Firms should incorporate scenario planning into their strategic decision-making processes to account for the potential negative impact of capital investments on ROE.

vi. Focus on Core Competencies: Businesses should focus on their core competencies, ensuring that capital is deployed in areas where the company has a competitive advantage and can achieve the best returns.

5.4 Contribution to Knowledge

This study contributes to the understanding of the potential effect of investment in capital expenditure specifically PPE and ROU (through the performance analysis metrics of NATR and CIR) on the performance of selected consumer goods manufacturing in Nigeria. It highlights the complexities of these relationships and underscores the need for strategic decisions pertaining to policy capital investment and shareholders return. The findings add to the existing literature by providing empirical evidence from the Nigerian context, offering insights that can inform both academic research and practical policymaking.

5.5 Suggestion to Further Studies

i. Future researchers should consider expanding the scope of their analysis beyond consumer goods manufacturing firms in Nigeria. By including firms from different sectors and regions, they can gain a more comprehensive understanding of how NATR and CIR affect ROE across various contexts. This broader perspective will help identify industry-specific factors and regional economic conditions that influence these relationships.

ii. Conducting cross-country comparisons can shed light on how different regulatory environments, economic conditions, and cultural factors impact the relationship between asset utilization, capital intensity, and profitability. Such studies can identify best practices and valuable lessons that can be applied across various contexts, enhancing the generalizability of the findings.

iii. Further research can be anchored on specific capital expenditure investment made in each year based on the statement of cash flow, comparable to the performance of the studied firm to give a different view from the compound approach of this study.

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