



**AN ANALYSIS OF ASSET MIX AND ITS INFLUENCE ON
FINANCIAL PERFORMANCE IN NIGERIA'S QUOTED
INDUSTRIAL FIRMS**

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Abstract: The study analyzed the relationship between asset mix and financial performance of quoted industrial companies in Nigeria, for the period of 2013-2022 (10years). The specific objectives of the study is to examine the measures of asset mix [Current Asset Ratio (CART), Non-Current Asset Ratio (NCART), Intangible Asset Ratio (INTART) and Investments Asset Ratio (INVART)] in relation to financial performance proxied with return on asset (ROA). The study sampled 10 industrial firms listed in the Nigerian Exchange Group and the secondary data used for the analysis was sourced from the annual reports and accounts of the sampled 10 industrial firms listed in the Nigerian Exchange Group. A total number of four research questions and four hypotheses were stated. Descriptive statistics, panel unit root test, diagnostics test and the multiple regression analysis of the (E-VIEW 9.0) at 0.05 level of significant (95% confidential interval) was used as a basis of testing the hypotheses. The findings revealed that Non-Current Asset Ratio (NCART), Intangible Asset Ratio (INTART) and Investments Asset Ratio (INVART) have a significant effect on return on asset while Current Asset Ratio (CART) do not have significant effect on Return on Asset. The study concluded that asset mix has a significant effect on the financial performance of quoted industrial companies in Nigeria. The study therefore, recommends that firms should increase their current and intangible assets, but should keep it at an optimum level that will ensure that maturing short-term business obligations are met and at the same time avoid keeping excess idle funds. This is because such investments will result in a proportionate increase in their financial performance. Therefore, excessive liquidity should be avoided.

Key Words: Asset, Mix, Current, Fixed, Ratio, Financial and Performance

1.1 Background to the Study

Resources, whether human or material, are essential to the survival of every organisation. The assets of an organisation are its resources. Proper management of these resources is essential to a company's success since it ensures the company can stay in business (Nangih & Emeka-Nwokeji, 2021). According to Temuhale and Ighoroje (2021), assets are resources that an organisation controls and that have their origins in events that have already occurred. These resources are intended to provide economic advantages to the organisation in the future, in their most basic form, they are just assets that the company owns and can utilise to make money or increase the wealth of the shareholders. These resources could be physical, immaterial, or withering away. Another way

to categorise them as current or non-current assets (Yinusa, Adelopo, Rodionova, Samuel, 2019). The asset mix or structure reveals the relative proportions of the different types of assets that a company utilises to fund its activities and make a profit. It also describes the structure or classification of the organization's assets (Ukhriyawati, Ratnawati & Riyadi, 2017). As said by Setiadharm and Machali (2017), the distribution of assets is a key component of any sound financial plan. Turnover assets, producing assets, and squandering assets are the three main types. The way a company's assets are organized—specifically, it's tangible non-current assets, intangible non-current assets, and current assets—is referred to as its asset mix, according to Okpara & Ifurueze (2020). In a similar vein, Schmidt (2014) categorised assets into four groups: current, long-term investments, tangible non-current, intangible, and others. Reyhani (2015), conversely, performance is the ultimate measure of success for the majority of organisations, especially those in the private sector. The degree to which the firm's resources are utilised effectively to accomplish their objectives is demonstrated by this. A failure on the side of the organization's leadership could be the result of nonperformance (Olatunji & Tajudeen, 2016). The financial and non-financial factors can be used to evaluate a company. The former can be determined by looking at financial indicators or ratios like profitability, liquidity, market, and efficiency, while the latter involves evaluating the firm based on qualitative variables like customer number, market share, product quality, etc (Okpara & Ifurueze, 2020). Financial performance, according to Okpara and Ifurueze (2020), reveals a company's financial fortes and weaknesses through the relationships between items in the statement of financial position and those in the income statement. Obara, Ohaka, Nangih and Odinakachukwu (2017), therefore, decision makers are able to assess the efficacy of company strategy and operations in monetary terms through analysing the financial performance of the corporation. Nevertheless, the emphasis of this research is on the monetary success of businesses. There has been a lot of debate among academics recently over the relationship between asset mix and financial performance. To put it simply, a company's assets mix or structure is crucial, since it determines the company's financial performance and position and also influences the interests of the stakeholders in the firm. Hence, in order to effectively balance the risks associated with performing and idle assets, financial managers are always striving to obtain the optimal assets mix in their organizations (Nwokeji & Agubata, 2019). Nigeria's economy has experienced significant growth and transformation in recent decades, with the stock market playing a crucial role in the country's economic development. As businesses strive for sustainability and competitiveness, the management of assets becomes a critical aspect of financial strategy. The composition of a firm's asset mix, including the allocation of resources among various types of assets, can have a profound impact on its overall financial performance (Nangih, Obuah & Kumah, 2020). Asset mix refers to the combination of different asset classes such as cash, stocks, bonds, and real estate that a company holds in its portfolio. The decision on how to allocate resources among these asset classes is a complex task that requires careful consideration of various factors, including risk tolerance, market conditions, and strategic goals. In the context of listed firms in Nigeria, understanding the relationship between asset mix and financial performance is essential for investors, policymakers, and corporate leaders (Nangih & Onuora, 2020). The Nigerian financial market is dynamic and influenced by both domestic and global factors. Economic reforms, regulatory changes, and shifts in market conditions can all affect how firms manage their assets and, subsequently, their financial performance. Therefore, a comprehensive investigation into the effect of asset mix on the financial performance of listed firms in Nigeria is warranted to provide valuable insights for stakeholders in the financial ecosystem. Organizations cannot exist without resources- human or material. Effective management of these resources (assets) underpins the continued viability of a business. These resources has represents a key feature of business prosperity. The importance of

assets in generating value for companies has attracted a great deal of research on different aspect of assets both from developed and developing economy. Thus, there had been extant studies on the link between company assets structure and financial performance. However, most of results of empirical studies on the subject were mixed. Not only that, but their methodologies were different. Again, none of the prior studies had specifically looked at the non-financial sector in Nigeria. The Nigerian financial market is characterized by its dynamic nature, influenced by factors such as economic reforms, regulatory shifts, and global market trends. These external variables can significantly impact the effectiveness of a firm's asset mix strategy and, consequently, its financial performance. A deeper investigation is required to ascertain how the ever-changing financial landscape in Nigeria interacts with the composition of asset portfolios. Firms operating in Nigeria face uncertainties arising from market fluctuations, geopolitical events, and regulatory changes. The lack of empirical insights into the relationship between asset mix and financial performance leaves corporate decision-makers without a clear understanding of how to strategically allocate resources to mitigate risks and capitalize on opportunities in the Nigerian business environment. The existing literature on the financial performance of listed firms in Nigeria provides a general overview of financial management practices. However, it lacks a nuanced examination of the intricate relationship between the diverse components of asset mix (such as cash, stocks, bonds, and real estate) and the financial outcomes of these firms. The absence of concrete empirical evidence hinders a comprehensive understanding of the dynamics at play. Achieving sustainable financial performance is a paramount goal for listed firms in Nigeria. Understanding the impact of asset mix on financial outcomes is essential for fostering sustainable business practices. Without empirical evidence, companies may struggle to align their asset allocation strategies with longterm financial sustainability objectives. In light of these issues, this research aims to bridge the existing gap in knowledge by conducting a systematic and empirical analysis of the effect of asset mix on the financial performance of listed firms in Nigeria. The findings will not only contribute to the academic literature but also offer practical insights for corporate decision-makers and stakeholders navigating the intricacies of the Nigerian financial market.

Review of Related Literature 2.1 Conceptual Review

2.1.1 Asset Mix and its Dimensions

Asset mix, also known as asset allocation, is a fundamental concept in portfolio management that involves strategically distributing investments among different types of assets to achieve a balance between risk and return (Nassar, 2016). The goal of asset mix is to construct a diversified portfolio that aligns with an investor's financial objectives, risk tolerance, and investment horizon. By diversifying across various asset classes, investors aim to optimize their portfolio's performance while minimizing the impact of volatility in any single investment (Nangih & Onuora, 2020). Assets mix has been defined by using various aspects by the different scholars based on the direction of the study. According to Myersse (2017), asset structure simply entails a combination of the various asset components which were identified as: fixed assets; intangible fixed assets and current assets, including cash in hand as well as cash at bank. On his part, Mwaniki and Omagwa (2017), investigated the assets structure and conceptualized it as the ratios of the firm's fixed and current assets to its total assets respectively. Companies typically categorize their assets based on the nature of the assets and their intended use. The categorization helps in financial reporting, management, and decision-making. Here are common categories of company assets:

Current Assets: Assets that are expected to be converted into cash or used up within one year. Examples: Cash, accounts receivable, inventory, short-term investments, and prepaid expenses (Akingunola, Olawale & Olaniyan, 2017).

Fixed Assets (Non-Current Assets): Long-term assets with a useful life of more than one year, used for the production of goods and services. Examples: Property, plant, equipment, machinery, vehicles, and intangible assets like patents and copyrights (Aljamaan, 2018).

Intangible Assets: Non-physical assets that lack a physical presence but have value due to legal or intellectual rights. Goodwill, patents, trademarks, copyrights, brand value, and intellectual property (Catarina & Pitau, 2018).

Tangible Assets: Physical assets with a measurable value and a finite lifespan. Examples: Land, buildings, vehicles, machinery, and equipment (Chukwu, Ohaka & Nwanyanwu, 2017).

Financial Assets: Assets that represent a claim on the company's financial position. Examples: Stocks, bonds, derivatives, and other securities (El-Chaarani & El-Abiad, 2019).

Investments Assets: Assets acquired with the intention of generating a return rather than for day-to-day operations. Examples: Long-term investments in stocks, bonds, mutual funds, or real estate (Emeka-Nwokeji & Agubata, 2019). These categories help businesses and stakeholders analyze the composition of a company's assets, understand its financial health, and make informed decisions regarding resource allocation, investment, and risk management.

2.1.2 Financial Performance

The potential of a corporation to earn profits, effectively manage its resources, and contribute to the creation of wealth for its shareholders is what is meant by the term "financial performance." (Emeka-Nwokeji & Agubata, 2019) The evaluation of a company's effectiveness, profitability, and overall health is accomplished through the examination of a number of financial statements, key performance indicators (KPIs), and other financial metrics. As a result of the fact that it offers insights into the operational efficiency and long-term sustainability of the organisation, financial performance is of utmost importance to stakeholders, which include investors, creditors, management, and regulatory bodies (Emeka-Nwokeji & Agubata, 2019). Financial performance can also be defined as a company's overall health, or the availability and development of more funds over time. Financial analysts typically use financial performance as a metric to assess and evaluate the performance of different companies, whether they are in the same industry or not. This is a crucial tool for making informed financial choices. In summary, financial success is a critical goal that businesses, particularly profit-oriented businesses, desire or strive towards (Yahaya & Lamidi, 2015) cited in Okonkwo, Adigwe, Ezu and Oko (2020). Two accounting metrics (Return on Equity (ROE) and Return on Asset (ROA)) were chosen based on the above, but this study chose the ROA.

2.2 Theoretical Review

2.2.1 Signaling Theory

This work is anchored on the signaling theory. The signalling theory is the idea that one party credibly conveys some information about itself to another party. In this regard, the firm will send a good signal to investors by adding fixed assets that may be used as collateral thus giving the company easy access to debt should need arises. Asset structure invariably indicates funds allocation in each part of assets. This is essential, since it is not only associated to the actual funds needed for the firm long-term's plan, it will in the near future determine the investors' perception towards the firm. The firm will send a good signal to investors by adding fixed assets that may be used as collateral for more debt should the need arise (signaling theory). It follows therefore, that companies with higher collateral value of assets (asset structure) have greater access to bank loans compared to the firms dominated by intangible assets due to the reduced risk level of investments and transactions involving assets, which are easily disposable on the market (Emeka-Nwokeji & Agubata, 2019). This study borrows from

this perspective and makes assumption that these assets are pledged as collateral, and thus the firm with high level of tangible asset can easily access debts, without being forced by situation to issue equity. In this perspective, a study, Hossain, Khan, & Khalid (2019), showed a positive relation between asset structures with firm performance. In another argument, they opined that liquidation value of fixed asset is usually higher than intangible asset, implying that when a firm goes bankrupt, it is less risky for the investors. In a similar vein, stated that a large tangible asset will determine firm's capability in giving bigger collateral. Therefore, there is an effect of asset structure/mix on firm value.

2.3 Empirical Review

Nangih and Emeka-Nwokeji (2021) assessed the effect of asset mix on financial performance of selected consumer goods firms in Nigeria. The specific objectives of the study were to determine the effects of tangible non-current assets, current and intangible assets structures and returns on asset. Ex post facto research design was adopted and data obtained from the annual reports of the companies for a seven-year period from 2013 to 2019. Multiple regression analytical technique was employed in analyzing the data. The findings of the study revealed that the independent variables employed in the study explained about 13.7% of the variations in returns on asset. Specifically, both current and intangible assets have positive and significant effect with ROA at 5% level of significance. Noncurrent asset has positive but insignificant effect on ROA. Thus, the assets composition of a firm plays a critical role in the financial performance of that firm, although it explains only about 14% of the performance of the firm. It was therefore recommended that firms should increase their current and intangible assets, but should keep it at an optimum level that will ensure that maturing short-term business obligations are met. Temuhale and Ighoroje (2021) examined the effect of asset structure and capital structure on the performance of quoted industrial goods firms in Nigeria within 2011-2019. The study was structured into two models with property, plant, and equipment (PPE), other fixed assets (OFA), and current assets (CAS) as explanatory variables for the asset structure model; long term debt to total equity (LTDTEQ), long term debt to total asset (LTDITAS), long term debt to long term capital (LTDTLT) as explanatory variables for the capital structure model while performance was represented in each model by return on asset (ROA). Data were sourced from the companies' annual statements of financial position and statements of profit and loss. The study employed descriptive statistics, correlational and panel data as methods of data analysis. Findings showed that while all the asset structure variables had a positive but insignificant effect, capital structure variables viz; ratio of long term debt to total equity, ratio of long term debt to total asset each had positive and significant effect and ratio of long term debt to total long term capital had an inverse and significant effect on return on assets of industrial goods firms in Nigeria. The study therefore concluded that while asset structure does not meaningfully affect the performance of industrial goods firms, capital structure has a positive effect. The study encouraged the firms to consider acquiring more long term debts to finance their operations and avoid investing too much on fixed assets. Nangih and Onuora (2020) examined the influence of capital intensity on the performance of listed oil and gas firms in Nigeria. The study used property, plant and equipment, intangible noncurrent assets, non-current prepayments as well as investment property as the dimensions of the independent variable while employing the profit margin as a measure of the dependent variable. Data was generated from nine (9) listed oil and gas companies for five years (2014 to 2018). The result of the random effect regression model used for testing the hypotheses showed that the predictor variables all had significant positive effects on the profit margin except intangible noncurrent assets. The study concluded that oil and gas companies with higher capital intensity were likely to be more profitable than those with low intensity.

Mwaniki and Omagwa (2017) investigated the association between asset structure and performance firms quoted under the commercial and service sectors on the Nairobi Stock Exchange. The study employed: Property, Plants and Equipment; current assets; intangible assets; and long-term investments as dimensions of the independent variable. Secondary data from the annual reports from 2010 to 2014 were collected and was analyzed with multiple regression analysis. The results indicated that Property, Plants and Equipment, and long-term investments had statistically significant and positive effect on financial performance, while current assets and intangible assets did not have statistical significance on firm financial performance. This study concluded that the firms should increase long term investments and PPE of increase profitability. Olatunji and Tajudeen (2016) assessed the effect of investment in non-current assets on profitability of selected quoted banks in Nigeria. Data were sourced from financial statements for the period 2000-2012. Net profit was used as the measure of the dependent variable whereas the independent variables were proxied by building, land, Leasehold premises, fixtures and fitting, and investment in computers. The findings revealed a significant relationship between the variables. It was concluded that investments in fixed assets had strong and positive statistical impact on the profitability of banking sector in Nigeria. Empirical studies on investment in assets mix have demonstrated mixed result based on various sectors. Reyhani (2015) examined the effect of assets structure on the performance of some companies of Tehran Stock Exchange. The study conceptualized assets structure (the independent variable) as fixed assets and variable assets and while EBIT was used as the proxy for the as a dependent variable. The findings of the study revealed that the fixed assets have a significant positive effect on EBIT.

2.4 Literature Gaps: Current research on Nigerian listed corporations' financial performance gives a broad overview of financial management. However, it fails to examine the complex relationship between asset mix components including cash, equities, bonds, and real estate and firm financial performance. The lack of empirical evidence makes understanding the dynamics difficult. Nigerian listed corporations prioritise financial sustainability. Understanding how asset mix affects financial outcomes is crucial for sustainable business. Companies may struggle to connect asset allocation with long-term financial sustainability goals without empirical proof. Due to these challenges, this research seeks to fill the information vacuum by undertaking a systematic and empirical analysis of asset mix's impact on Nigerian listed enterprises' financial performance.

Research Methodology

The Ex-Post Facto research design was used. This type of research design takes place after the event or fact has already occurred. The population of this study is over 287 firms listed on the Nigeria Exchange Group, which now serves as the population of the study. A sample of 10 firms, namely Academy Press Plc, Berger Paints Plc, Lafarge Cement Plc, Portland Paints And Product Plc, DN Meyer Plc, Austin Laz And Co Plc, Dangote Cement Plc, Beta Glass Plc, Cap Plc, and Aluminum Extrusion Industries, was drawn for the study, which serves as the sample size of the study. The study made use of judgmental sampling technique because, in drawing the sample of 10 firms out of the 287 firms listed on the Nigeria Exchange Group, it was done purposively by the researcher due to the availability of annual reports and accounts of the 10 firms on the Nigeria Exchange Group from 2013-2022. The secondary source of data was used for this study. The annual reports and accounts of 10 companies were used to obtain data to measure asset mix [Current Asset Ratio (CART), Non-Current Asset Ratio (NCART), and Intangible Asset Ratio (INTART) and Investments Asset Ratio (INVART)] and financial performance (proxied with Return on Assets (ROA)) of the listed manufacturing firms on the Nigeria Exchange Group. The statistical technique of data analysis was adopted, as well as descriptive statistics, correlation matrix and in view of the hypothesis formulated for this research, the method of data analysis chosen was multiple regression analysis

using the panel least square (PLS) method. E-VIEW 9.0 statistical computer software was used to analyze the data in order to establish the kind of relationship that exists between the independent variables and the dependent variable used, which will serve as the basis for testing the hypotheses raised in this study. The model specifies that financial performance (proxied with Return on Assets (ROA)) is significantly influenced by variables of asset mix, including; Current Asset Ratio (CART), Non-Current Asset Ratio (NCART), Intangible Asset Ratio (INTART) and Investments Asset Ratio (INVART). The formulated model is as follows:

The functional Model is:

$$ROA = f(CART, NCART, INTART, INVART)$$

Econometrically express as:

$$ROA = \beta_0 + \beta_1 \text{LogCART} + \beta_2 \text{LogNCART} + \beta_3 \text{LogINTART} + \beta_4 \text{LogINVART} + E$$

Where;

ROA= Return on Assets,

CART = Current Asset Ratio,

NCART = Non-Current Asset Ratio,

INTART = Intangible Asset Ratio, INVART = Investments Asset Ratio, E = Error Term. β_0 = Intercept $\beta_1 - \beta_4$ = Coefficient of the Independent Variables. The a priori expectation is $\beta_1, \beta_2, \beta_3, \beta_4$ is lesser or greater than 0.

Table 3.1 Measurement and Predicted Signs

Variables	Acronyms	Measure	Type of Variable	Expected Sign
Return on Assets	ROA	Net Profit / Total Assets	Dependent Variable	
Current Asset Ratio	CART	Current Asset/ Total Assets	Independent Variable	-
Non-Current Asset Ratio	NCART	Non-Current Asset / Total Assets	Independent Variable	+
Intangible Asset Ratio	INTART	Intangible Asset / Total Assets	Independent Variable	+
Investments Asset Ratio	INVART	Investments Asset / Total Assets	Independent Variable	+

Source: The researcher from data gathered, 2024.

Results and Discussion

The descriptive statistics of comprises of the minimum, maximum, mean and standard deviation values.

Table 4.1: Descriptive Statistics

	LOGROA	LOGCART	LOGNCAR T	LOGINTAR T	LOGINVAR T
Mean	0.857503	0.034803	0.176944	1.472629	0.482521
Median	0.933427	0.043231	0.200736	1.594916	0.655600
Maximum	1.653387	1.511720	1.394941	2.161600	2.024118
Minimum	1.303466	1.005086	0.719509	0.787282	1.547677
Std. Dev.	0.461761	0.213135	0.241998	0.474644	0.526596

Skewness	-1.339754	0.964751	0.219508	-2.087178	-2.252132
Kurtosis	6.751438	7.562682	2.794856	9.123663	7.415823
Jarque-Bera	85.01218	102.2544	0.968630	226.5636	165.7829
Probability	0.000000	0.000000	0.016119	0.000000	0.000000
Sum	82.32034	3.480268	17.51741	145.7903	48.25208
Sum Sq. Dev.	20.25618	4.497225	5.739158	22.07813	27.45301
Observations	100	100	100	100	100

Source: E-VIEW Version 9.0 Output, 2024.

Table 4.1 shows the descriptive statistics for the CART, NCART, INTART, INVART and ROA. In Table 4.1, CART has a minimum value of 1.0051, maximum value of 1.5117, a mean value of 0.0346 and Std. Dev. value of 0.2131. NCART has a minimum value of 0.7195, maximum value of 1.3949, a mean value of 0.1769 and a Std. Dev. 0.2420. This implies that NCART with the Std. Dev. of 0.2420, show that the volatility in is 24.20%. INTART have a minimum value of 0.7873, maximum value of 2.1616, a mean value of 1.4726 and Std. Dev. value of 0.4746. Since the mean value is greater than the Std. Dev., it implies that (with the mean value of 1.4726) the growth is rapid since the mean value is greater than the Std. Dev. INVART have a minimum value of 1.5477, maximum value of 2.0241, a mean value of 0.4825 and Std. Dev. value of 0.5266. It implies (with the mean value of 0.4825) that INVART is slow, since the mean value is lower than the Std. Dev. ROA, measures the financial performance of firms' investment and shows the net income as a percentage of the firms' asset. ROA has a minimum value of 1.3035, a maximum value of 1.6534, an average value of 0.8575 and Std. Dev. value of 0.4618. Since the mean value is greater than the Std. Dev. value, it implies that the ROA of the firms has increased tremendously for the duration of this study.

4.1 Panel Unit Root TEST

This test is carried out to check if the data series are stationary or not. It is important to note that if a set of data is not stationary, then the result obtained would be absurd and hence, the result from such data would be unacceptable. The best way of checking the stationary of a set of panel data is to carry out a panel unit root test using the Levin, Lin & Chu Test, Im Pesaran and Shin W-Test, Augmented Dicker-Fuller's Test and PP Fisher Test. The summarized result is presented in the

Table 4.2a below; CART, NCART, INTART, INVART **Table 4.2a: Group panel unit root test: Summary**

Series: LOGROA C LOGCART, LOGNCART, LOGINART,

LOGINVART

Date: 09/09/24 Time: 17:04

Sample: 1 100

Exogenous variables: Individual effects

Automatic selection of maximum lags

Automatic lag length selection based on SIC: 0 to 1

Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-28.0540	0.0000	5	472
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-25.7617	0.0000	5	472
ADF - Fisher Chi-square	115.434	0.0000	5	472
PP - Fisher Chi-square	99.2114	0.0000	5	474

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Source: E-Views .09 Output (2024).

Table 4.2a reveals the summary of the panel unit root test carried out for the independent variables namely; CART, NCART, INTART, INVART and the dependent variable; ROA. The null hypothesis states that the data is not stationary. if the Levin, Lin & Chu Test, Im Pesaran and Shin W-Test, Augmented Dicker-Fuller's Test and PP Fisher Test, results show probability values that are lower than the critical value at any level of significance, in order to reject the null hypothesis. It was observed from Table 4.3a above, all probability values of Levin, Lin & Chu Test, Im Pesaran and Shin W-Test, Augmented Dicker-Fuller's Test and PP Fisher Test are 0.0000 for the variables are less than (0.05)5% level of significance. Therefore, we hereby reject the null hypothesis which states that the data is not stationary and the panel data series are normally distributed and suitable multiple regression.

Table 4.2b: Breusch-Godfrey Serial Correlation LM Test

F-statistic	12.24320	Prob. F(2,87)	0.1256
Obs*R-squared	20.64576	Prob. Chi-Square(2)	0.3245

Source: E- VIEW 9.0 Output, 2024

Prior to estimating the models, residuals of the variables were ascertained to check for the presence of serial correlation. This was done using the serial correlation LM test. The serial correlation LM test in Table 4.2b details that there is no element of serial correlation in the models owing to the fact that the p-values of the f-statistics are insignificant at 5% level of significance.

Table 4.2c: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.324150	Prob. F (4, 89)	0.8611
Obs*R-squared	1.349780	Prob. Chi-Square (4)	0.8529
Scaled explained SS	3.719366	Prob. Chi-Square (4)	0.4453

Source: E-VIEW 9.0 Output, 2024.

The situation in which the variability of a variable is unequal across the range of values of a second variable that predicts it leads to problem of heteroskedasticity. To ensure that there is homoscedasticity in the model estimation,

the heteroskedasticity test via the Breusch-PaganGodfrey was performed. With the result there is no problem of heteroskedasticity in the models as the p-values of the f-statistics are insignificant at 5% significance level.

Table 4.2d: Ramsey RESET Test

Equation: UNTITLED

Specification: LOGROA C LOGCART, LOGNCART,
LOGINTART, LOGINVART

Omitted Variables: Squares of fitted values

Value	Df	Probability	
t-statistic	1.806060	88	0.0743
F-statistic	3.261854	(1, 88)	0.0743
Likelihood ratio	3.421231	1	0.0644

Source: E-VIEW 9.0 Output, 2024.

To ensure that the models were well specified, the Ramsey Reset specification test was performed and the result presented. From the Ramsey Reset specification result, it was obvious that the models were well-specified. The p-values of the f-statistics for all the models are insignificant at 5% significance level.

Table 4.3: Panel Least Squares Regression Result

Dependent Variable: LOGROA

Method: Panel Least Squares

Date: 09/11/24 Time: 17:06

Sample: 1 100

Included observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.392269	0.205436	6.777129	0.0000
LOGCART	-0.955938	0.700949	-1.363776	0.1761
LOGNCART	1.363770	0.493710	2.762288	0.0070
LOGINTART	0.195761	0.051767	3.781579	0.0009
LOGINVART	0.072974	0.030796	2.369593	0.0096
R-squared	0.154250	Mean dependent var 0.856131		
Adjusted R-squared	0.116238	S.D. dependent var		
S.E. of regression	0.437763	Akaike info criterion		
Sum squared resid	17.05562	Schwarz criterion		
Log likelihood	-53.15990	Hannan-Quinn criter.		
F-statistic	4.058002	Durbin-Watson stat		
Prob(F-statistic)	0.004549			

Source: E- VIEW Version 9.0 Output , 2024.

The findings of this study are hereby discussed and supported with relevant literatures thus; the pvalue of CART is 0.1761 which is more than the set value of 0.05 and the t-ratio value is -1.3638, which indicates the extent of significance to which CART is significance to ROA. The coefficient of CART is -0.9559 which implies that CART has a negative trend with ROA. One percent (1%) movement in p-value of CART would lead to 95.59% decreases in ROA. CART has an insignificant influence on ROA of listed industrial firms in Nigeria. This is in line with Temuhale and Ighoroje (2021) but contradicts the finding of Nangih and Emeka-Nwokeji (2021) and Nangih and Onuora (2020). The p-value of NCART is 0.0070 which is less than the significance value of 0.05, which indicates the extent of significance to which NCART affects ROA. The coefficient of NCART is 1.3638, which implies that NCART has a positive trend with ROA. One percent (1%) increase in NCART would lead to 136.38% increase in ROA. NCART has a significant influence on ROA of listed industrial goods firms in Nigeria. This is in line with Nangih and Onuora (2020) but contradicts the finding of Nangih and Emeka-Nwokeji (2021). The p-value of INTART is 0.0009 which is less than the set value of 0.05 and the t-ratio value is 3.7816, which indicates the extent of significance to which INTART affects ROA. The coefficient of INTART is 0.1958 which implies that INTART has a positive significant effect with ROA. One percent (1%) movement in INTART would lead to 19.58% increases in ROA. INTART has a significant influence on ROA of listed industrial goods firms in Nigeria. This is in line with Nangih and Onuora (2020) but contradicts the finding of Nangih and Emeka-Nwokeji (2021). The p-value of INVART is 0.0096 which is less than the set value of 0.05 and the t-ratio value is 2.3696 which indicate that the extent of significance between INVART and ROA. The coefficient of INVART is 0.0730, which implies that INVART has a positive trend with ROA. One percent (1%) movement in INVART would lead to 7.30% increase in ROA. INVART has a significant influence on ROA of listed food and beverages firms in Nigeria. This is in line with Nangih and Onuora (2020) but contradicts the finding of Nangih and Emeka-Nwokeji (2021).

Summary of The Model: The co-efficient of determination (R^2) is 15% (0.1543) showing that 15% of the variation in dependent variable; ROA, has been explained by the independent variables [CART, NCART, INTART and INVART]. Also, the F-Statistics with a value of 4.0580 with Pvalue of 0.0045 showed that all the independent variables [CART, NCART, INTART and INVART] jointly affected the dependent variable; ROA of industrial goods firms that are listed in the Nigerian Exchange Group.

5.1 Conclusion

The study analyzed the relationship between asset mix and financial performance of quoted industrial companies in Nigeria, for the period of 2013-2022 (10years). The specific objectives of the study is to examine the measures of asset mix [Current Asset Ratio (CART), Non-Current Asset Ratio (NCART), Intangible Asset Ratio (INTART) and Investments Asset Ratio (INVART)] in relation to financial performance proxied with return on asset (ROA). The study sampled 10 industrial firms listed in the Nigerian Exchange Group and the secondary data used for the analysis was sourced from the annual reports and accounts of the sampled 10 industrial firms listed in the Nigerian Exchange Group. A total number of four research questions and four hypotheses were stated. Descriptive statistics, panel unit root test, diagnostics test and the multiple regression analysis of the (E-VIEW 9.0) at 0.05 level of significant (95% confidential interval) was used as a basis of testing the hypotheses. The findings revealed that Non-Current Asset Ratio (NCART), Intangible Asset Ratio (INTART) and Investments Asset Ratio (INVART) have a significant effect on return on asset while Current Asset Ratio (CART) do not have significant

effect on Return on Asset. The study concluded that asset mix has a significant effect on the financial performance of quoted industrial companies in Nigeria.

5.2 Recommendations

The study therefore, recommends that;

1. Firms should increase their current and intangible assets, but should keep it at an optimum level that will ensure that maturing short-term business obligations are met and at the same time avoid keeping excess idle funds. This is because such investments will result in a proportionate increase in their financial performance. Therefore, excessive liquidity should be avoided.
2. The management of listed firms in Nigeria should ensure that it takes into consideration the quality of each assets in order to ensure contribute positively to the productivity of the firm, so as to enhance the overall profitability of the firm.
3. The management of consumer goods firms should carefully consider the levels of their noncurrent assets investments, as they may not make any meaningful contribution to financial performance.
4. This notwithstanding the finding, the study suggested that more research still has to be conducted especially on asset mix and firm performance, taking other performance measure like Return on Equity (ROE) and Tobin's Q into consideration. This will add in solving the problem of paucity of research in this area.

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