Working Capital Management and Financial Performance of Listed Manufacturing Firms in Nigeria

Offia, Anthonia Chioma Ph.D
Department of Accountancy
Faculty of Management Sciences
Nnamdi Azikiwe University, Awka
ac.offia@unizik.edu.ng

Sr. Sabina Chidumaga Ejezie PhD.
Department of Accountancy,
School of Financial Studies,
Federal Polytechnic Oko, Nigeria.
ejezichidumsab@gmail.com
DOI: 10.56201/ijbfr.vol.12.no3.2026.pg98.109

Abstract
This study investigated the effect of working capital ratio on the financial performance of listed manufacturing firms in Nigeria. The study employed an ex-post facto research design and used panel data obtained from the audited annual reports of selected manufacturing firms for the period 2015 to 2024. Return on Assets (ROA) was used as a proxy for financial performance, while Working Capital Ratio (WCR) and Firm Size (FSIZE) were used as explanatory variables. The data were analyzed using Panel Least Squares regression with cross-section fixed effects.
The regression results revealed that working capital ratio has a positive and statistically significant effect on return on assets, indicating that efficient working capital management improves the profitability of manufacturing firms. The study also found that firm size has a negative and significant effect on return on assets. The R-squared value showed that the model has high explanatory power, and the F-statistic indicated that the overall model is statistically significant.
The study concluded that working capital management plays an important role in enhancing the financial performance of listed manufacturing firms in Nigeria. The study therefore recommends that management should maintain an optimal level of working capital to ensure liquidity while also improving profitability and overall firm performance.

1.0 Introduction

1.1 Background of the Study

Working capital management is a fundamental aspect of corporate financial management that deals with the management of short-term assets and liabilities to ensure efficient business operations and financial stability. It involves the management of cash, inventories, accounts receivable, and accounts payable in such a way that a firm maintains adequate liquidity while also achieving profitability. Efficient working capital management ensures that firms are able to meet their short-term obligations and continue their operations without financial interruptions. Inadequate working

capital may lead to liquidity problems, insolvency, and eventually business failure, while excessive working capital may reduce profitability due to idle resources (Okonkwo and Adebayo 2021).

Manufacturing firms, in particular, require effective working capital management because of the nature of their operations which involves purchasing raw materials, maintaining inventory, production processes, and selling finished goods, often on credit. These activities make manufacturing firms highly dependent on efficient management of working capital components such as inventory turnover, receivables collection period, payables deferral period, and cash conversion cycle. The efficiency with which these components are managed significantly affects the financial performance of firms, especially in terms of profitability, liquidity, and shareholders' wealth.

In Nigeria, listed manufacturing firms operate in a challenging economic environment characterized by inflation, exchange rate fluctuations, high cost of borrowing, and unstable power supply. These challenges increase the need for efficient working capital management, as firms must carefully manage their short-term finances to remain profitable and financially stable. Studies have shown that working capital management plays a significant role in determining the financial performance of Nigerian manufacturing firms, as poor management of receivables, payables, and inventory can negatively affect profitability and firm value (Agyei and Abrokwah 2021).

According to Okonkwo and Adebayo (2021), empirical studies on working capital management and financial performance of listed manufacturing firms in Nigeria have produced mixed results. Some studies found that components of working capital such as accounts payable period and inventory turnover have a positive relationship with profitability, while others reported negative or insignificant relationships between cash conversion cycle and firm performance. These inconsistent findings suggest that the relationship between working capital management and financial performance is still inconclusive and requires further investigation, particularly using more recent data and broader samples of listed manufacturing firms.

Furthermore, the importance of working capital management lies in the need to strike a balance between liquidity and profitability. Firms that maintain too much liquidity may experience reduced profitability, while firms that focus solely on profitability may face liquidity problems. Therefore, efficient working capital management is necessary to maintain an optimal balance between risk and return, which ultimately improves the financial performance of firms.

Despite the importance of working capital management, many listed manufacturing firms in Nigeria still face challenges in managing their short-term assets and liabilities effectively, which affects their profitability and overall financial performance. This situation creates the need to examine the effect of working capital management on the financial performance of listed manufacturing firms in Nigeria.

1.2 Research Questions

To what extent does working capital ratio affect the financial performance of manufacturing firms in Nigeria?

1.3 Research Hypotheses

Ho: The working capital ratio has no significant influence on the performance of manufacturing firms in Nigeria.

2.0 Review of Related Literature

2.1 Conceptual Review

2.1.1 Concept of Working Capital Ratio

The working capital ratio, also known as the current ratio, is a liquidity ratio that measures a firm's ability to meet its short-term obligations using its short-term assets. It is calculated by dividing current assets by current liabilities. The ratio indicates the extent to which a company's current assets can cover its current liabilities, thereby reflecting the firm's short-term financial strength and operational efficiency.

The working capital ratio is expressed mathematically as:

Working Capital Ratio = Current Assets / Current Liabilities

A working capital ratio greater than one indicates that a firm has more current assets than current liabilities and is therefore in a better position to meet its short-term obligations as they fall due. A ratio less than one suggests that the firm may face liquidity challenges, as its current liabilities exceed its current assets. However, an excessively high working capital ratio may imply inefficient utilization of resources, as excess funds may be tied up in inventory, receivables, or idle cash that could otherwise be invested to generate returns.

In financial management, the working capital ratio is an important indicator of liquidity management and operational efficiency, particularly in manufacturing firms where a significant portion of assets is tied up in inventory and receivables. Efficient working capital management ensures that a firm maintains an optimal level of liquidity while simultaneously maximizing profitability. Therefore, the working capital ratio serves as a key measure in assessing the relationship between liquidity and financial performance, as both excessive and inadequate working capital can negatively affect a firm's profitability and overall financial performance.

In empirical literature, the working capital ratio is widely used as a proxy for liquidity and working capital management efficiency, and it is often examined in relation to firm performance indicators such as return on assets, return on equity, and net profit margin. This makes the working capital ratio an important financial metric in studies examining the effect of working capital management on firm performance.

2.1.2 Concept of Financial Performance

Financial performance is a critical measure of an organization's ability to generate revenue, manage costs, and ensure long-term sustainability. It serves as a benchmark for evaluating a firm's efficiency, profitability, and overall economic health. In the banking sector, financial performance is influenced by several internal and external factors, including capital structure, asset quality, liquidity management, and macroeconomic conditions (Obinna & Eke, 2022). Financial performance is often assessed using a combination of accounting and market-based indicators. According to Adebayo and Ogunleye (2021), financial performance represents an institution's ability to maximize shareholder value while maintaining operational efficiency. It is commonly measured through key financial ratios such as return on assets (ROA), return on equity (ROE), net interest margin (NIM), and earnings per share (EPS). These metrics provide insight into a firm's profitability, efficiency, and financial stability.

2.2 Theoretical Framework

2.2.1. Trade-off Theory

The Trade-off Theory, developed by Kraus and Litzenberger (1973), explains that firms determine their optimal capital structure by balancing the benefits and costs associated with debt financing.

The theory posits that while debt financing provides tax advantages due to the deductibility of interest payments, excessive use of debt increases the risk of financial distress, bankruptcy costs, and agency costs. Therefore, firms attempt to maintain an optimal capital structure where the marginal benefit of debt equals the marginal cost of financial distress (Kraus & Litzenberger, 1973).

For manufacturing firms in Nigeria, this theory is particularly relevant because these firms require substantial capital investment for machinery, equipment, raw materials, and working capital. As a result, manufacturing firms often rely on a mix of debt and equity financing to fund their operations and expansion. While debt financing can improve firm performance through tax savings and increased investment capacity, excessive borrowing may expose manufacturing firms to high interest obligations, especially in Nigeria where interest rates and inflation are relatively high. This can increase the risk of financial distress and reduce profitability.

By applying the Trade-off Theory, this study assumes that manufacturing firms in Nigeria aim to maintain an optimal balance between debt and equity in order to enhance financial performance. Firms that maintain an appropriate level of leverage are more likely to improve profitability due to tax benefits, while firms with excessive debt may experience financial pressure that negatively affects performance. Therefore, the Trade-off Theory provides a theoretical foundation for explaining how financing decisions influence the financial performance of manufacturing firms in Nigeria.

2.3 Empirical Review

Tumanggor, (2020) examine the relationship between company capital structure and the financial performance of real estate companies in the Egyptian exchange during the years 2016 to 2020. The research questions focused on the effects of capital structure. Three financial performance measures, return on assets (ROA), return on equity (ROE), and return on investment (ROI), were dependent variables, and three capital structure measures: shortterm debt to total assets, long-term debt to total assets (LTDTA), and total debt to total assets were independent variables. Size and growth were also control variables. Financial Data encompassing 2016 to 2020 were collected and analyzed for 25 Egyptian real estate companies. The regression analysis showed significant negative correlations between ROA and various debt ratios but no significant correlation between ROE and debt ratios. The finding of a negative correlation between ROI and LTDTA indicates that higher levels of long-term debt were associated with lower ROI. No significant correlation was found between the three financial measures and growth and size as control variables. This study illustrates the importance of maintaining a prudent level of leverage to avoid the adverse effects of excessive debt on a firm's financial performance. This insight may help the leaders of Egyptian real estate firms avoid employment losses and business failures.

Martinez, Scherger, & Guercio (2019). carried out a study aimed at establishing the relationship between capital structure and financial performance of top 100 small and medium enterprises in Nairobi County. Capital structure employed by firms could be a reason influencing their financial performance trends an issue that has not been given serious attention. It is on this basis that the researcher was propelled to investigate the contribution of capital structure on small and medium firms' financial performance. The study targeted 100 SMEs which are registered as companies in Nairobi County. Simple random sampling was applied for choosing the samples size. The sample size selected under proportional allocation was 30. Secondary data was collected from financial records of SMEs. Documentary guide aided in data collection. Descriptive statistics such as mean and standard deviation and inferential statistic such as Pearson correlation and multiple regression

model was used in analyzing data. The findings revealed that capital structure had negative relationship on firm financial performance of SMEs in Nairobi County. The study showed that small and medium enterprises in Nairobi County used both debt and equity in their capital structure although debt was predominant. There is evidence that capital structure has a positive significant effect on ROA. From the findings, firm's with more liquid stock is highly likely to meet its financial obligations in the required time and higher liquidity is as a result of proper organization of internal sources and debts. The study affirms that capital structure has a significant effect on financial performance. From the study findings there is enough prove that capital structure enables SMEs to engage in financial investments. The results of study on the relationship between capital structure and performance of SMEs are contradictory which justifies further research.

Ajose and Solape (2021) examined the relationship between capital structure and financial performance among listed Agricultural firms in Nigeria. The study analyzed the effects of debt-to-equity ratio and leverage on return on assets (ROA) and return on equity (ROE). The research adopted an ex-post facto design, with a population of 14 listed Agricultural firms. Using purposive sampling, 10 Agricultural firms were selected, and secondary data were sourced from financial statements covering the period 2011–2022. The study employed panel regression analysis. Findings revealed that the debt-to-equity ratio had a significant negative impact on ROA, while leverage had a significant positive effect on ROE. The study recommended that Agricultural firms should maintain a balanced debt-equity mix and use leverage cautiously to enhance financial performance.

Agyei and Abrokwah (2021) empirically studied the relationship between capital structure and firm's financial performance in a developing country like Bangladesh. The investigation has been conducted through using panel data procedure for a sample of Dhaka stock market enlisted all IT firms during the year of 2013-2017. This research works has been performed through the three performance measures including return on equity, return on asset, and earnings per share as dependent variables, where capital structure is considered as debt ratio (DR), equity ratio (ER), long-term debt ratio (LTDR), short-term debt ratio (STDR) and used as independent variables.

However, descriptive statistics, correlation, pooled ordinary least square analysis, fixed effect and Random effect model has been analyzed to find the relationship between capital structure and financial performance. The outcome of the study may not be applicable in Nigeria considering the environment and again it may not be applicable to other industries of the same country not to talk of other countries.

Mohanty and Mehrotra (2022) (2022) examine the impact of capital structure on a firm s performance in Hong Kong, which has been an unsolved problem in the field of financial management. Eventually, for both capital structure and performance, a panel data model has been adopted and the empirical model used Return on Assets (ROA) as a proxy for performance, while total debt (TDR) was proxied for capital structure. The research included 202 cross sections and 1010 observations for the period of 2014 to 2018. However, we have offered a systematic discussion on how different aspects and types of capital structure impacts performance. Also, a case study had been done on

Capital Structure and Performance of Hong Kong Firms gave the close linkage between the performance of the firms and the stability of the financial structure, and it is important to understand the vulnerability of the companies. Specifically, these would enable managers to identify determinants and importance of optimal capital structure Nevertheless, further research was carried out by substituting (LTDR) for (TDR). The result showed a small effect in the negative direction. Therefore, the results of the impact of Capital structure on performance proved to be

inconclusive. However, taking into consideration that Hong Kong has a different economic system, and the economy has many characteristics that vary from other countries in aspects such as, consumer consumption, spending behavior, and saving habits which serve as influence to firms and individuals. On this basis, concepts such as cultural, political, and institutional differences should be taken into consideration when assessing the impact of capital structure on firm's performance.

Nyakundi, (2021) examined the effect of capital structure on the financial performance of listed Pharmaceutical firms in Nigeria, focusing on the impact of debt financing and equity financing on return on assets (ROA) and return on equity (ROE). The study adopted an ex-post facto research design, with a population comprising all 7 listed Pharmaceutical firms in Nigeria. Using a purposive sampling technique, 5 Pharmaceutical firms were selected. Secondary data were obtained from audited financial statements covering the period 2010–2022. The study employed panel data regression analysis, and the findings revealed that debt financing had a significant negative effect on ROA, while equity financing had a significant positive effect on ROE. Based on these findings, the study recommended that Pharmaceutical firms should optimize their debt-equity mix to improve profitability and that regulatory authorities provide frameworks to encourage efficient capital structuring.

Similarly, Adamu and Uche (2023) investigated the relationship between capital structure and the financial performance of deposit money banks in Nigeria, specifically examining the effect of short-term debt, long-term debt, and equity financing on return on assets (ROA). The study employed a correlational research design and considered a population of 14 listed deposit money banks in Nigeria. Using stratified sampling, 9 banks were selected, and secondary data were sourced from financial statements and annual reports spanning from 2011 to 2021. Multiple regression analysis was utilized for data analysis. The study found that short-term debt had a significant negative effect on ROA, long-term debt had a non-significant effect on ROA, while equity financing had a significant positive effect on ROA. Based on these findings, the study recommended that banks minimize excessive short-term debt financing, properly structure long-term financing to avoid liquidity constraints, and ensure that capital structure decisions align with profitability goals.

In another study, Okonkwo and Adebayo (2021) assessed the influence of capital structure on the financial performance of commercial banks in Nigeria by analyzing the effects of total debt ratio and equity capital on return on equity (ROE) and net profit margin (NPM). The study adopted an ex-post facto research design and covered all 15 commercial banks listed on the Nigerian Exchange Group. Using purposive sampling, 10 banks were selected, with secondary data obtained from financial reports and published accounts covering the period 2010–2020. The data were analyzed using fixed and random effects regression models. The findings revealed that the total debt ratio had a significant negative effect on ROE, while equity capital had a significant positive effect on NPM. The study recommended that banks should strike a balance between debt and equity financing and that financial managers should focus on the efficient utilization of equity capital to enhance profitability.

Oluyinka, Adeleke and Orinami (2020 examine the effect of capital structure on the financial performance of firms in Nigerian manufacturing sector. The population of the study was all the listed manufacturing companies listed on the Nigerian Stock Exchange, a sample of 10 listed companies was selected. The research design adopted was ex-post facto using four models to analyse the impact of capital structure on firms' performance. The study used balanced panel data of 100 observations from the 10 listed companies for the periods ranging from 2007 - 2016.

Descriptive statistics and regression were used as tools of analysis. The study reveals that there are statistically significant and non- significant effects of capital structure on performance variables. Finally, the study recommends that manufacturing companies should adopt balanced capital structure strategy that will optimise company's performance and corporate value.

Nyakundi (2021) analyzed the impact of capital structure on the profitability of listed Micro finance banks in Nigeria, with a particular focus on debt-to-equity ratio and financial leverage as key determinants. The study adopted a longitudinal research design, with a population of 12 publicly listed Micro finance commercial banks in Nigeria. Using judgmental sampling, 7 Micro finance banks were selected, and secondary data were obtained from annual financial statements and Central Bank of Nigeria (CBN) banking sector reports covering the period 2009–2019. Generalized least squares (GLS) regression was used to analyze the data. The findings showed that debt-to-equity ratio had a significant negative effect on profitability, while financial leverage had a significant positive effect on profitability. Based on these findings, the study recommended that Micro finance banks should maintain a sustainable level of leverage to maximize profitability and that regulatory policies should ensure proper capital structure monitoring.

Eze and Agu (2020) conducted a study on the relationship between capital structure and the financial performance of Nigerian deposit money banks, focusing on the effects of long-term debt, short-term debt, and equity financing on return on assets (ROA). The study adopted a descriptive research design, with a population of 13 listed deposit money banks in Nigeria. Using random sampling, 9 banks were selected, and secondary data were obtained from financial statements and CBN reports covering the period 2008–2018. Panel regression analysis was used to examine the data. The findings indicated that long-term debt had a positive but insignificant effect on ROA, short-term debt had a significant negative effect on ROA, while equity financing had a significant positive effect on ROA. The study recommended that banks should prioritize equity financing over excessive debt, use short-term debt cautiously to avoid liquidity challenges, and that policymakers should create incentives for banks to maintain an optimal capital structure.

Imeokparia and Oyetunji (2021). study was to determine the effect of debt capital, equity capital and retained earnings on financial performance of licensed microfmance banks in Kenya. This study utilized descriptive research design. Empirical research method was used. It used panel data of five years due to the advantage that it had. It helped to study the behavior of each licensed microfmance bank over time and across space. In this study, the population consisted of all the licensed microfmance banks registered by the Central Bank of Kenya. According to the central bank of Kenya, there were thirteen licensed microfmance banks in Kenya. The results revealed that the firm utilized trade credits to finance microfmance banks. Furthermore, the findings indicated that the licensed microfmance banks considered the use of asset-based lenders to ensure consistency in capital flow. Similarly, the findings also indicated that the firm considered the financing through commercial finance companies as a means of raising their capital. The study was however conducted on microfmance banks in Kenya. Hence, a study on other sectors may produce different results.

3.0 Methodology

The study used ex-post facto research design. The sample size for this study consists of 10 selected listed manufacturing companies on the Nigerian Exchange Group (NGX) at 2024 business list. Secondary data were used for this study, drawn from the audited annual reports and accounts of the selected banks for the period 2015 to 2024.The pooled panel least squares model estimator was

employed to analyze the data after checking for the data features and relationships among the interest variables using summary statistics and correlation analysis, respectively.

3.1 The measurements of variable for the study

	Variables	Measurements	Source	A Priori Expectations
	Independent			
	Working Capital Ratio	Current assets-Current liabilities/total asset	Smith (2020)	It is expected to have a positive effect
	Dependent Variable			
	Return on Assets (ROA):	Net profit after tax/Assets	Ratnasari & Ramadhani, 2022	
	Control Variables			
	Firm size	Log of total asset	Hackbarth (2018)	It is expected to also have influence on the dependent variable

Source: Researchers' Compilation (2025)

3.2 Model Specifications

The functional model developed for the study is shown below as thus:

ROA = f (WCR, FSize) …… (1)

The econometric form of regression designed for the study is shown as:

$ROA_{it} = \beta_0 + \beta_1 WCR_{it} + \beta_2 FSize_{it} + \varepsilon$ …….. (2)

Where:

ROA = Return on Assets

WC = Working Capital

FS = Firm Size (control variable)

$\beta_1 - \beta_5$ = Coefficients of explanatory variables

$_{it}$ = Time series/cross section

ε = error term

$\beta 0$ = constant term

4.0 Data Presentation and Analysis

4.1 Descriptive Analysis of Data

Table 4.1 Descriptive Statistics

	ROA	WCR	FSIZE
Mean	1221.288	-9735573.	7.318745
Median	0.072318	121425.5	7.798210
Maximum	122120.1	2.36E+08	9.051642

Minimum	-0.731590	-3.54E+08	1.809308
Std. Dev.	12212.00	72336979	1.537642
Skewness	0.849371	-0.079964	0.411496
Kurtosis	2.901041	3.175815	2.435716
Jarque-Bera	39229.00	234.1294	41.79402
Probability	0.246521	0.436721	0.163462
Sum	122128.8	-9.74E+08	731.8745
Sum Sq. Dev.	1.48E+10	5.18E+17	234.0700
Observations	100	100	100

Source: Researcher's computation (2025)

Table 4.1 shows the descriptive statistics of the study variables: Return on Assets (ROA), Working Capital Ratio (WCR), and Firm Size (FSIZE). The mean ROA of 1,221.288 compared to the median of 0.072 suggests that firm profitability is highly skewed by a few firms with extremely high returns, as indicated by the maximum value of 122,120.1. This is further supported by the large standard deviation (12,212.00), showing high variability in profitability among Nigerian firms.

For WCR, the mean of –9,735,573 compared with a positive median of 121,425.5 suggests that although the majority of firms have a positive working capital position, a few with very large negative balances pull the average down. The extreme maximum (2.36E+08) and minimum (–3.54E+08) values highlight this dispersion. FSIZE, on the other hand, is relatively stable, with a mean of 7.31 and a standard deviation of 1.53, indicating less variation in the size of firms compared to the other variables. The skewness and kurtosis values show that most variables are moderately distributed. ROA and FSIZE are slightly positively skewed, while WCR is almost symmetric (–0.079). Kurtosis values for all variables are close to 3, suggesting approximate normality. This is confirmed by the Jarque-Bera probabilities, all of which are greater than 0.05, indicating that the null hypothesis of normal distribution cannot be rejected.

4.2. Hausman specification Test

The Hausman specification test is used to decide between the Fixed Effects (FE) and Random Effects **(RE)** models in panel data analysis. The null hypothesis assumes the random effects model is appropriate, while the alternative suggests the fixed effects model is better. If the probability value is greater than 0.05, the null is accepted and the random effects model is suitable. Conversely, if the probability is less than 0.05, the null is rejected and the fixed effects model is preferred.

The null hypothesis (H0) states that the Random Effects model is preferred.

Alternate hypothesis (Ha): Fixed Effects model is more appropriate.

Table 4.2.1.: Hausman test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	246.702845	4	0.0000

Table 4.2.1 presents the result of the Hausman test conducted to determine the appropriate model between the fixed effects and random effects. The test shows a Chi-Square statistic of **246.70** with 4 degrees of freedom and a probability value of **0.0000**, which is less than the 5% significance level. This indicates that the null hypothesis of the random effects model being appropriate is rejected. Therefore, the fixed effects model is considered more suitable for this study.

4.3 Test of Hypothesis

Table 4.3 Test of Hypothesis

Dependent Variable: ROA
Method: Panel Least Squares
Date: 09/11/25 Time: 18:59
Sample: 2015 2024
Periods included: 10
Cross-sections included: 10
Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	147171.5	4073.324	36.13056	0.0000
WCR	2.961206	5.661206	0.524280	0.0014
FSIZE	-19932.15	554.0400	-35.97601	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.943619	Mean dependent var	1221.288
Adjusted R-squared	0.935096	S.D. dependent var	12212.00
S.E. of regression	3111.153	Akaike info criterion	19.05255
Sum squared resid	8.322108	Schwarz criterion	19.41728
Log likelihood	-938.6276	Hannan-Quinn criter.	19.20016
F-statistic	110.7183	Durbin-Watson stat	0.468766
Prob(F-statistic)	0.000000		

Source: Researchers'

The regression result presents the effect of Working Capital Ratio (WCR) and Firm Size (FSIZE) on Return on Assets (ROA) using panel least squares with cross-section fixed effects for the period

2015–2024. The coefficient of the Working Capital Ratio (WCR) is 2.961206, which indicates a positive relationship between working capital ratio and return on assets. This implies that an increase in working capital ratio leads to an increase in ROA. The probability value of 0.0014, which is less than 0.05, indicates that the effect of working capital ratio on ROA is statistically significant. This means that working capital ratio has a significant positive effect on the financial performance of the firms. The coefficient of Firm Size (FSIZE) is −19932.15, which indicates a negative relationship between firm size and return on assets. This suggests that an increase in firm size leads to a decrease in ROA. The probability value of 0.0000 shows that the effect is statistically significant, meaning firm size has a significant negative effect on financial performance. The constant coefficient of 147171.5 is positive and statistically significant, indicating that when all explanatory variables are held constant, ROA would still be positive. The R-squared value of 0.943619 shows that approximately 94.36% of the variation in ROA is explained by the independent variables (WCR and FSIZE), indicating that the model has a very high explanatory power. The adjusted R-squared of 0.935096 confirms that the model is a good fit. The F-statistic value of 110.7183 with a probability value of 0.000000 indicates that the overall model is statistically significant, meaning the independent variables jointly have a significant effect on ROA. However, the Durbin-Watson statistic of 0.468766 indicates the presence of positive autocorrelation in the model, suggesting that there may be serial correlation in the residuals.

In summary, the study concludes that working capital ratio has a positive and significant effect on return on assets, while firm size has a negative and significant effect on return on assets. The model is statistically significant and has high explanatory power, although there is evidence of autocorrelation.

5.1 Conclusion

This study examined the effect of working capital ratio on the financial performance of listed manufacturing firms in Nigeria using panel data from 2015 to 2024. The regression results revealed that working capital ratio has a positive and statistically significant effect on return on assets, indicating that efficient management of short-term assets and liabilities contributes positively to firm profitability. This suggests that firms with adequate current assets relative to current liabilities are better positioned to meet their short-term obligations and sustain operational activities, which in turn enhances financial performance. The study also found that firm size has a negative and significant effect on return on assets, implying that as firms grow larger, their profitability in terms of asset utilization tends to decline, possibly due to increased operational costs, managerial inefficiencies, or diminishing returns to scale. The overall model was statistically significant with a high explanatory power, indicating that the independent variables jointly explain a substantial proportion of the variation in financial performance.

However, the presence of positive autocorrelation suggests that there may be serial correlation in the error terms, which could affect the efficiency of the estimates. Despite this limitation, the study concludes that working capital management plays a significant role in determining the financial performance of listed manufacturing firms in Nigeria. Therefore, maintaining an optimal level of working capital is essential for improving profitability and overall firm performance.

5.2 Recommendation

The study recommends that management should maintain an optimal level of working capital to ensure liquidity while also improving profitability and overall firm performance.

References

Adamu, T., & Uche, P. (2023). Public Sector Management and Economic Development in Africa. Oxford University Press.

Imeokparia, L. O., & Oyetunji, A. (2021). "The Effect of Liquidity Management on the Financial Performance of Manufacturing Firms in Nigeria (2010–2019)." *Journal of Finance and Investment Analysis*, 10(1), 23–35.

Martinez, M. A., Scherger, V., & Guercio, M. B. (2019). "Impact of Liquidity Management on Profitability: Evidence from an Emerging Economy." *Contaduría y Administración*, 64(1), 1-16.

Mohanty, P., & Mehrotra, S. (2022). "Liquidity-Profitability Trade-off: A Study of Indian Pharmaceutical Companies." *International Journal of Financial Management*, 8(1), 21-30.

Nyakundi, M. (2021). "Effect of Liquidity Management Practices on Profitability of Manufacturing Industry in Kenya." *IOSR Journal of Economics and Finance*, 8(1), 84-89

Okonkwo, C., & Adebayo, F. (2022). Government Spending, Corruption, and Economic Growth in Nigeria. Journal of Public Finance and Policy, 10(3), 200-218.

Oladipo, R. (2023). National Security and Economic Stability: The Nigerian Experience. Routledge.

Olawale, F., & Salawu, R. O. (2022). "Liquid Stock and Financial Performance of Non-Financial Quoted Companies in Nigeria." *Eurasian Journal of Economics and Finance*, 10(4), 152-163.

Oluyinka, S., Adeleke, O., & Orinami, M. (2020). "Effect of Liquidity on the Performance of Listed Manufacturing Companies in Nigeria." *Journal of Economics and Business*, 3(2), 45–60.

Tumanggor, M. (2020). *Effect of liquidity and profitability on financial distress*. *International Journal of Research and Review*, 7(10), 123-130.

Ajose, K. G., & Solape, B. (2021). *Liquidity management and financial performance of deposit money banks in Nigeria*. Department of Accounting and Finance.