*American International Journal of Business Management (AIJBM)*
*ISSN- 2379-106X, www.aijbm.com Volume 08, Issue 01 (January- 2025), PP 172-191*

# Working Capital Management And Financial Performance Of Listed Manufacturing Firms In Nigeria: Moderating Effect Of Managerial Ownership

Prof. Aliyu Idris
*+2348036129108; dr.aliyuidris@gmail.com*
*Revenue mobilisation Allocation and Fiscal Commission*

**ABSTRACT:-** *The study examined the moderating effect of managerial ownership on the relationship between working capital management and financial performance of listed manufacturing firms in Nigeria from 2013 to 2023. The fifty-six (56) listed manufacturing firms in Nigeria constituted the population of the study and a sample of twenty-six (26) was selected using a purposive sampling technique. The study adopted the fixed effect model to test the study hypotheses. The study findings revealed that the moderating effect of managerial ownership on account Receivable management, and inventory management have a positive significant effect on the financial performance of listed manufacturing firms in Nigeria, while moderating effect of managerial ownership on account payable management have a negative significant effect on financial performance. In addition, the moderating effect of managerial ownership on Cash conversion cycle revealed a positive insignificant effect on the financial performance of listed manufacturing firms in Nigeria. Based on the findings, the study recommended that the listed manufacturing firms in Nigeria in Nigeria need to improve their working capital efficiency, and carefully consider their cash conversion cycle not it in isolation when making strategic decisions to improve their financial performance. Furthermore, the firm should focus on increasing managerial ownership by offering stock options and other incentives to managers for improved working capital management, better decision-making, and a greater alignment of interests between managers and shareholders.*

**Keywords:** Working capital, Managerial ownership, financial performance, Consumer goods firms.

## I. INTRODUCTION

In a global context, the problem of working capital management represents an ongoing topic because of its importance in ensuring the optimal route for businesses and its ability to act as a buffer of liquidity (Baños-Caballero et al. 2020). Corporate finance literature recognizes the importance of short-term financial decisions for enhancing a firm's performance (Shin & Soenen, 1998; Lazaridis & Tryfonidis, 2006; Deloof, 2003). The question of firm performance has persisted as a key subject in research on strategic management. It is frequently believed that a company's performance ultimately determines whether it will remain relevant in a certain industry (Obure, 2016). Financial performance is also used to compare similar companies within the same industry or sector and is often used to gauge a firm's overall financial health over a specific period of time (Miller & Craig, 2001).

Amidst these considerations, one of the most essential roles of managers is to determine the ideal level of working capital to strike a balance between return and risk. Firms must strike a balance between investing in current assets and paying liabilities to maintain adequate liquidity while also generating good revenue. As their maturity aligns with the terms of the activity they use, they must generate income while meeting their short-term obligations (Raheman & Nasr, 2007). Working capital management is concerned with decisions on the amount and combination of current assets and current liabilities, as well as how to achieve a firm's objectives (liquidity and solvency). This objective is often accomplished through the management of receivables, payables, inventory, the cash conversion cycle, and the overall operating cycle.

In the early 20th century, families typically owned and funded businesses. Nowadays, companies are growing and evolving to the point that their owners can no longer exercise sole control over their daily operations. This led to the separation of ownership from control and has brought about agency conflicts between management and shareholders (Abdioglu, 2016). Therefore, shareholders have given management discretion over the company's operations. Management ownership aids in the resolution of agency problems and improves working capital management decisions (Pouraghajan et al., 2015). High managerial shareholding could lead to domination of the board of directors by management and result in the confiscation of corporate wealth. In a different view, Hasan and Butt (2009) opined that when management obtains a high equity stake in the firm, the self-interests in the long-term sustainability of the company may induce managers to implement effective and efficient working capital policies which translate to effective working capital management. On the other hand,

Abdioglu (2016) argues that managers' perception changes from maximization of personal gain to maximization of shareholders wealth and firm performance which they stand to benefit as owners of the business.

Among the objectives of the firm is profit maximization. At the same time, preserving the liquidity of the firm is an important objective too. The problem is that increasing profits at the cost of liquidity can bring serious problems to the firm (Umenzekwe *et al.,* 2021). The manufacturing sector plays an essential role in the Nigerian Economy. The economic meltdown in 2015 that lasted up to 2017 and the spread of the novel Coronavirus (COVID-19) pandemic in 2019 contributed to the fluctuating trend in financial performance in the manufacturing sector in Nigeria. The sector experienced a 10% decline in real growth rate during the pandemic, which resulted from a shortage of raw materials, inadequacy of supply, low demand, increase in foreign exchange risk, high operational cost and low sales since every individual focused on staying Alive (Proshare, 2020). The unexpected price change, fall in revenue generation, and delay in debtor's payment necessitated the need for effective working capital management, which would significantly improve the firm's liquidity, revenue and financial performance. Equally, Lawal et al. (2015) reiterate that most manufacturing companies in Nigeria have fallen into disrepair due to poor management of working capital. They further argue that most managers fight to increase inventory turnover in a bid to increase profitability without being mindful of the need to speed up the debtor collection period and delay the creditor payment period as far as possible to provide the funds needed to keep the cycle flowing. The problem of illiquidity among manufacturing companies in Nigeria is alarming due to credit constraints and economic recession.

The consequences of poor working capital management on financial performance are further evidenced in the increase in the frequency of suspension and delisting of firms from the Nigeria Exchange Group (NGX), which has continued to raise a lot of concern for potential investors and researchers in the country. Most of the firms delisted from the NGX were particularly from the manufacturing sector and the consumer goods sub-sector (Oji, 2023). Between the years 2013 to date, at least seven (7) companies in the sector were placed on suspension and thereafter delisted from the Securities Market, of which five were delisted by NGX due to non-compliance with post-listing requirements (Jos International Brewery in 2016, P.S Mandrides and company in 2016, Premier brewery in 2016, UTC Plc in 2017; Afrik Pharmaceuticals Plc in 2018 ). Additionally, two firms voluntarily exited the market (Seven-up Bottling company in 2018; Nigerian German Chemicals Plc; Dangote Flourmill in 2019; Paints and Coatings Manufacturers Nigeria Plc in 2018; A.G. Leventis (Nigeria) Plc in 2020; Nigerian German Chemicals Plc, 2021), while two others opted for a merger (Vono product Nigeria in 2016; and Nigeria Bag Manufacturing company in 2013; Ashaka Cement Plc in 2017; Cement Company of Northern Nigeria Plc in 2019). The delisting of the firms from the stock exchange is a complex issue that has significant implications for various stakeholders, including shareholders, employees, creditors, and the overall economy. Therefore, it is very important to assess and understand the factors that may influence the frequency of delisting in this context. One such factor that has received limited attention in the literature is the role of working capital management practice and its potential interaction with managerial share ownership.

A review of previous empirical studies revealed that there is mixed evidence of the relationship between working capital management and financial performance. Some categories of literature reported a positive relationship between working capital and financial performance (such as Rahman Shaik, 2021; Abbas & Isiaka, 2021; Kimutai & Muigai, 2018), while some studies (such as Yousaf & Bris, 2021; Abdullahi *et al.,* 2020; Umenzekwe *et al.,* 2021; Binti Mohamad & MohdSaad, 2010) reported a negative relationship between working capital management and financial performance. Given the inconsistencies of findings from previous empirical studies, this study argues that managerial share ownership could explain the inconsistency in the previous findings. Therefore, the study introduces Managerial shareholding as a moderating variable.

Managerial ownership measures the percentage of equity ownership owned by Chief executive Officers (CEO) and directors to the total shareholding (Lin, 2012). Madobi et al. (2020) argue that diverse firms require better systematic monitoring to align the interests of managers and shareholding. They further averred that high managerial shareholding is desirable in diverse firms because it tends to make the managers act in the best interest of the company even where shareholder monitoring becomes more difficult as the firms expand into different operations and across international borders. The agency theory suggests that managerial ownership serves as a critical monitoring mechanism that helps to achieve goal congruence between managers and shareholders. Prior studies such as Abbas & Isiaka (2021); Yousaf and Bris (2021); Umenzekwe *et al.* (2021); Abdullahi et al. (2020); Kimutai and Muigai (2018) did not consider the role of managerial ownership in the relationship between working capital management and financial performance. Therefore, this current study intends to provide an answer to the question; Does managerial ownership moderate the relationship between working capital management and the financial performance of listed manufacturing firms in Nigeria?

## II. OBJECTIVE OF THE STUDY

The main objective of the study is to examine the moderating effect of managerial ownership on the relationship between working capital management and the financial performance of listed manufacturing firms. The specific objectives are;

i. To investigate the moderating effect of managerial ownership in the relationship between inventory management and financial performance of listed manufacturing firms in Nigeria.
ii. To assess the moderating effect of managerial ownership in the relationship between account receivable management and financial performance of listed manufacturing firms in Nigeria.
iii. To examine the moderating effect of managerial ownership in the relationship between cash management and financial performance of listed manufacturing firms in Nigeria.
iv. To examine the moderating effect of managerial ownership in the relationship between account payable management and financial performance of listed manufacturing firms in Nigeria

**Research Hypotheses**

The following hypotheses were formulated in line with the research objective;

**$H_1$**: The moderating effect of managerial ownership on inventory management has no significant effect on the financial performance of listed manufacturing firms in Nigeria.

**$H_2$**: The moderating effect of managerial ownership on account receivable management has no significant effect on financial performance of listed manufacturing firms in Nigeria.

**$H_3$**: The moderating effect of managerial ownership on cash management has no significant effect on financial performance of listed manufacturing firms in Nigeria.

**$H_4$**: The moderating effect of managerial ownership on account payable management has no significant effect on financial performance of listed manufacturing firms in Nigeria.

## III. LITERATURE REVIEW

**Concept of Working capital management**

Working capital management is concerned with the interactions, interrelations, and workings of the firm's current assets and liabilities in order to make the best possible use of both to meet the organization's intended aim, which is focused on liquidity and profitability. It is a very sensitive and important organ in the management of finances (Gill, Biger, & Mathur, 2010). It covers the selection of the quantity and financing of these assets as well as the management of the business. Working capital is the residual value when current assets are subtracted from short-term liabilities (Leonard et al., 2018).

Working Capital Management and Financial Performance of Listed Manufacturing Firms in Nigeria encompasses several critical conceptual variables that interplay to determine organizational financial effectiveness. Inventory management represents a sophisticated process of strategically ordering, storing, and utilizing company inventory, which fundamentally involves tracking inventory levels, determining optimal order quantities, and managing stock replenishment cycles. This approach aims to minimize holding costs while preventing potential stockouts that could disrupt operational continuity.

Receivable management focuses on controlling and collecting outstanding customer payments through carefully designed credit policies, negotiated credit terms, and systematic collection strategies. The primary objective is optimizing cash flow while simultaneously minimizing potential bad debt risks. By meticulously managing accounts receivable, organizations can enhance their financial liquidity and maintain healthy customer relationships. Account Receivable Management is determined as the Account receivable divided by revenue multiplied by 365 days as used by Abdullahi et al.(2020); Umenzekwe et al. (2021); Umar and Abdualqadir (2021) Shams et al. (2019). Also inventory management is determined as the inventory divided by sales multiplied by 365 days, as used by Abdullahi et al.(2020); Umenzekwe et al. (2021); Umar and Abdualqadir (2021) Shams et al. (2019).

Account payable management involves handling a company's financial obligations to suppliers, which requires strategic balancing between maintaining positive supplier relationships and optimizing cash flow dynamics. This process includes managing payment schedules, negotiating favorable credit terms, and ensuring timely and efficient transactions that support both short-term financial stability and long-term strategic objectives. Account payable management is expressed as the account payable divided by the cost of sales multiplied by 365 days as used by Abdullahi et al.(2020); Umenzekwe et al. (2021); Umar and Abdualqadir (2021) Shams et al. (2019).

Cash management represents a comprehensive approach to optimizing organizational liquidity and working capital. It encompasses strategies for efficient cash collection, disbursement, and investment, with a particular focus on managing the cash conversion cycle. By implementing robust cash management practices, firms can enhance their financial flexibility and create opportunities for strategic investments. Cash management

is computed as the account receivable management plus inventory management minus account payable management as used by Abdullahi et al.(2020).

Firm size emerges as a significant variable, representing the scale and operational complexity of an organization. Typically measured through total assets, revenue, or employee count, firm size substantially influences financial strategies, resource accessibility, and overall performance capabilities. Larger firms often possess more sophisticated financial management infrastructures and diverse investment opportunities. Firm size is calculated as the natural log of total assets as used by Umenzekwe et al. (2021).

Firm age reflects the duration of a company's operational existence since incorporation, serving as a critical indicator of organizational experience, market adaptation, and stability. The age of a firm potentially impacts financial management practices, risk tolerance, and strategic decision-making processes, with more established organizations typically demonstrating more refined financial strategies. Firm age is the number of years from the date of listing to date as used by Umenzekwe et al. (2021).

Leverage represents the strategic utilization of borrowed funds to finance operational activities and investment initiatives. Measured through debt-to-equity or debt-to-total assets ratios, leverage indicates a company's financial risk profile and potential for return amplification. Effective leverage management can enable significant growth while maintaining acceptable risk parameters. Leverage is is computed as total debt to total equity as used by Abubakar, Umaru and Olumuyiwa (2020); Şamiloğlu and Akgün (2016).

The conceptual framework draws substantive insights from established working capital management literature, providing a comprehensive understanding of the intricate relationships between these variables and organizational financial performance.

**Concept of Financial Performance**

Financial performance is a subjective indicator of how effectively a company can utilise resources from its main line of business and generate income (Balagobei and Velnampy, 2017). According to a different perspective by Kajola (2008), "firm performance" refers to how well a company uses its financial resources to accomplish its overall goal. Rajkumar and Hanitha (2015) opined that financial performance is a firm's ability to generate new resources from day-to-day operations over a specific period. The concept of financial performance has over the decade been discussed in accounting and finance literature alike. Authors have expressed their views on this concept. Kenton (2021) contends that the evaluation of financial performance represents a subjective assessment of a company's proficiency in leveraging assets derived from its core operational model to generate revenue streams. In the view of Kaplan and Norton (2001), financial performance is just one of several important perspectives that must be considered when evaluating a company's overall performance.

**Concept of Managerial Ownership**

Agatha et al. (2020) defined management ownership as a manager's participation in the choice to purchase firm stock. Suaidah and Utomo (2018) sees managerial ownership as the ownership of company shares by the management of the firm or subsidiary of the company According to the corporate finance literature, managerial ownership is a crucial strategy for lowering agency conflicts by coordinating management and shareholder objectives. According to Jensen and Meckling (1976) managerial share ownership could reduce managerial incentives to use perks, steal money, and engage in other non-maximizing conduct. On the other side, as managerial ownership increases, control of the company moves from external shareholders to management which will lead to managerial entrenchment. Managerial shareholding refers to the ownership of shares of the firm by its top management, including executives and directors (Bhakat & Richardson, 2009). This phenomenon has received increased attention in recent years as a potential mechanism for aligning the interests of management with those of other stakeholders, such as shareholders (Jensen & Murphy, 1990).

**Empirical Review**

Several studies have been conducted in an attempt to explain the relationship between working capital management and financial performance. Odo and Udodi (2022) analyzed the effect of cash management on financial performance of firm in the manufacturing sector in Nigeria. The fifty-five (55) firms that made up the sector constituted the study population; 36 firms were purposively selected from the consumer and industrial goods sub-sector. The study adopted the ex-post facto research design and relies on secondary data from the annual report of the manufacturing firms. The OLS regression output revealed that cash management (cash conversion cycle) has a positive significant influence on the financial performance (ROA and Tobin's q) of the manufacturing firms.

Yegon et al. (2022) investigated the moderating impact of ownership structure on the association between working capital management decisions and financial performance in tea firms located in Kenya. The study focused on multinational and KTDA-managed tea firms situated in Kericho, Bomet, and Nandi counties. The purposive sampling method was employed to select 40 multinational firms, and a correlational research

design was adopted. Working capital management was assessed using various indicators, including accounts receivable collection period, accounts payables payment period, inventory conversion period, cash conversion period, and working capital management policies. Ownership structure was measured through a binary variable (1 = Multinational & 0 = KTDA privately managed). Return on Asset (ROA) served as the dependent variable, representing financial performance. Secondary data was utilized, and the study employed descriptive statistics and multiple regression estimation for analysis. The study's findings indicated that accounts receivable collection period, accounts payables payment period, and inventory conversion period had a significant negative impact on financial performance. Moreover, the study documented that ownership structure exhibited a negative significant moderating effect on the relationship between working capital management decisions (accounts receivables collection period, accounts payables payment period, inventory conversion period) and financial performance. While the findings of the study by Yegon et al. (2022) are interesting in the context of Tea firms in Kenya, it is essential to provide further investigation, analysis and interpretation to understand the underlying mechanisms in the context of consumer goods firms in Nigeria and potential implications of these relationships. Similarly, the binary measure of ownership structure might oversimplify the complexity of ownership dynamics within tea firms.

Yousaf and Bris (2021) explored the connection between working capital management and the financial performance of 326 Czech firms. The study sampled firms from the manufacturing firm, automobile, and construction in the country. The generalized method of moment result revealed that working capital management negatively impacts firms' performance. Using listed non-financial firms in Nigeria from 2014 to 2018, Abbas and Isiaka (2021) reported that all aspects of working capital management (receivables, payables, inventory, and cash) have a significant effect on financial performance. They further aver that the non-financial firms should focus their managerial attention on lowering their inventory turnover period and account. In Kenya, Kimutai and Muigai's (2018) study findings revealed that cash management, inventory management, account payable management, and account receivable management have a positive significant effect on the financial performance of SMEs in Kenya. In Saudi Arabia, Rahman Shaik (2021) investigated the influence of the working capital component on firms' profitability. The study sampled 100 industrial firms listed on the Tadawul Stock Exchange from 2009-2019. The pooled regression result revealed that the component of working capital management (cash conversion cycle) has a positive significant effect on firms' profitability.

Using the listed oil and gas firms in Nigeria, Abdullahi et al. (2020) revealed that inventory management has no significant effect on financial performance, while account receivable management negatively affects financial performance. In addition, the study found that account payable management exerts a positive and significant effect on financial performance. Also, Leonard et al. (2018) research on two breweries firms in Nigeria from 2006-2014 revealed that the number of days inventory is held has no significant effect on the profitability, while the cash conversion cycle has a significant negative effect on the profitability.

Sulaiman et al. (2019) examined the effect of working capital management on the profitability of 16 listed consumer goods firms in Nigeria for the 7 years from 2010 to 2016 using a panel data approach. Findings reveal that the trade receivable period has a significant positive effect on return on asset, while the current ratio, trade payable, and inventory conversion period have no significant effect on financial performance measured by return on asset. In contrast, Umenzekwe et al. (2021) assessed the connection between working capital management and the financial performance of manufacturing firms in Nigeria. The study sampled 6 manufacturing firms in Nigeria from 2013-2020 and adopted the ex-post facto research design. The research result revealed that working capital management has a negative significant influence financial performance of manufacturing companies.

Manar (2019) assessed the effect of cash conversion cycle on the profitability of some selected firms in Jordan. The study covers a three years period that ranges from 2016 to 2018. Secondary data and multiple regression method of data analysis were adopted in the study. The result revealed that cash conversion cycle has a positive significant effect on the profitability of the manufacturing firms in Jordan.

Shams et al. (2019) examined the impact of ownership structure on the working capital management and financial performance of firms listed in the Pakistani textile sector. The study encompassed all the listed firms in the sector, with a sample of 77 firms randomly selected from the period of 2011-2015. Leverage and average collection period were considered as independent variables, while managerial and institutional ownership were analyzed as moderating variables. Control variables included the quick ratio, current ratio, accounts payable, inventory turnover, cash conversion cycle, and firm size. The study utilized secondary data and employed the Fixed Effect Model. The results indicated that leverage, average collection period, and quick ratio exhibited a significant negative impact on financial performance. However, the cash conversion cycle demonstrated an insignificant effect. Moreover, the current ratio, inventory turnover, and accounts payable period showed a positive effect on financial performance. Regarding the moderating effect, managerial ownership negatively and significantly influenced the relationship between leverage, average collection period, quick ratio, cash conversion cycle, and financial performance. However, it showed an insignificant moderating

effect on the relationship between the current ratio, accounts payable, and financial performance. Similarly, institutional ownership had a negative and significant impact on the relationship between leverage, average collection period, quick ratio, and financial performance, but displayed an insignificant moderating effect on the relationship between the cash conversion cycle, current ratio, accounts payable, and financial performance. Based on the findings, the study recommended that creditors should exercise caution when investing in companies, as managerial and institutional ownership can significantly affect firm performance. The major limitation of the study by Shams et al. (2019) lies in the limited focus on the textile sector in Pakistan and it would be beneficial to assess whether the findings hold true in the contexts of listed manufacturing firm in Nigeria.

Asamu *et al.* (2019) assessed the effect of cash management on financial performance of manufacturing firms in Nigeria, the study covered a period of ten years from 2007 to 2016. The fifty-three (53) manufacturing firms listed on the Nigeria stock exchange as at 2016 constituted the population of the study; a sample of fifteen firms was considered using the purposive sampling technique. Ex-post facto research design and OLS estimation method were adopted in the research. Cash management was measured with cash ratio and cash conversion cycle while financial performance was proxy with return on asset. The result revealed that cash ratio and cash conversion cycle have no significant effect on the performance of the firms.

Furthermore, Yakubu et al. (2017) studied the impact of working capital management on the corporate profitability of listed non-financial firms over the period 2010- 2015, using the random effect model. Results confirm that the average collection period has a significant negative effect on financial performance.

In Johannesburg, Oseifuh (2016) studied the effect of the cash conversion cycle on the profitability of non-financial firms in the country. The research sampled 75 non-financial firms on the country's stock exchange from 2003 to 2012. The panel data methodology and multiple regression estimation techniques were adopted in the study. The dependent variable was measured with return on asset while the independent variable was proxy with cash conversion cycle and its component (inventory period, payable period and receivable period). The result revealed that inventory conversion period, receivable period and profitability are negatively related, while account payable period is significant and positively related to profitability of the firms. Lastly, the result evidenced that cash conversion cycle has a positive significant effect on the profitability of the selected firms in Johannesburg.

Similarly, Binti et al (2010) evaluated the link between working capital components, profitability, and market value using secondary data from 172 firms in Malaysia over five years ranging from 2003- 2007. Results from correlation and multiple regression analysis show that negative relationships exist between various components of working capital and different measures of profitability and market value utilized in the study. Also, Kasozi (2017) examined the effect of working capital management on the profitability of manufacturing firms in South Africa. The study sampled 69 manufacturing firms listed on the Johannesburg securities exchange (JSE) during the period 2007- 2016. Findings show that the average collection period is significant and negatively related to return on assets.

A review of the previous empirical literature revealed that some strands of studies such as Binti et al (2010); Kasozi (2017); Kimutai and Muigai (2018), Yousaf and Bris (2021) were conducted in a country other than Nigeria, as such finding from this studies may not be applicable in Nigeria due to variation in government policies, growth, and other economic factors. Furthermore, some recent studies used a relatively small sample, studies like Umenzekwe et al. (2021) sampled only 6 manufacturing firms, and Leonard et al. (2018) sampled only two. Similarly, the period covered by most of these studies ranges from 2006 to 2020. As a build-up to the previous empirical studies, this study period would span from 2012 to 2022 and further introduce a moderating variable (managerial shareholding) to enhance the outcome and conclusion of the previous study.

**Theoretical Framework**

This study is anchored on the Cash conversion cycle theory, Risk trade-off theory, and agency theory.

The Cash conversion cycle theory originated by Richards and Laughlin (1980) suggests that the shorter the cash conversion cycle of a business the better the financial performance. The cash conversion cycle highlights the strengths and weaknesses of the company's working capital management policy. In addition, the risk trade-off theory by Kraus and Litzenberg (1973) and Myers (1984) balanced the tax shield benefit of debt against the bankruptcy costs caused by the inability of firms to meet up with their debt obligation. Also, Nwidobia (2012) pointed out that working capital management is about the risk-return trade-off. Furthermore, Adamu and Onwe (2018) averred that risk-return trade-off characterizes each of the working capital decisions and that liquidity risk and risks of opportunity loss are the two types of risk inherent in working capital. Furthermore, the agency theory suggests that managerial ownership serves as a critical monitoring mechanism that helps to achieve goal congruence between managers and shareholders. Since the managers control the major activities of the organization, this study seeks to test the assumption of whether managerial share ownership

could further strengthen the effectiveness of the working capital management thereby enhancing the firms' performance and minimizing the liquidity risk.

## IV. METHODOLOGY

This study adopted the longitudinal panel research design. The longitudinal panel research design was considered appropriate because the study relies on secondary data with independent and dependent variables already collected from consumer companies listed on the exchange over the years. No primary data is envisaged.

The Nigeria listed manufacturing sector is made up of companies that engaged in Basic iron, metal and steel; Electrical and Electronic; Paper products and Pulp products; plastic and Rubber products; Food, Beverages and Tobacco Products; Cement; Wood Products; Textile, Apparel and Footwear; Chemical and Pharmaceutical Products; Motors vehicles and Assembly (Proshare, 2020). The companies are clustered across consumer goods, industrial goods, healthcare, conglomerate, and agricultural sectors on the floor of the Nigerian exchange group. Therefore, the fifty-six (56) firms across the sectors listed on the Nigeria Exchange Group (NGX) as at December 2023 constituted the population of the study, However, three-point filters based on; availability of data from 2013-2023, technical suspension and nature of business classification on the Nigerian Stock exchanges were used as filter. Applying this filter, thirty (30) firms were dropped and a sample of twenty-six (26) manufacturing firms were selected,

The year 2013 was chosen as the starting point because it marks the beginning of a significant delisting of firms from the NGX. The ending year was selected because the annual reports of most listed manufacturing firms were only available up to 2023 at the time of this study. The study used secondary data from 2013-2023. The data was sourced from the audited annual financial statement published on the Nigeria exchange Group and the firms websites. The study adopted the descriptive statistics, correlation and multiple regression techniques of data estimation. Multiple regressions (panel fixed and random effects) were utilized to identify the variation in the dependent variable (financial performance) due to changes in any of the independent variables (cash management, inventory management, receivables management, and payable management). However, the study adapted Saunders (1956) moderated multiple regression to assess the moderating effect of managerial ownership on relationship between working capital management and financial performance.

However, the results of a regression analysis can be affected by several assumptions, such as linearity, independence of errors, homoscedasticity, and normality of errors (Hair et al., 2010). To assess the validity of these assumptions and the overall fit of the regression model, various regression diagnostic tests have been developed (Bowerman & O'Connell, 1990). In this research, a range of regression diagnostic tests was utilized to ensure that the regression results are reliable.

**Variable Measurement**

The information on how the variables was measured presented in table 1 below;

**Table 1: Variable Definition and Measurement**

| **Dependent Variable** | **Measurement and Source** |
|---|---|
| Return on Asset (ROA) | Earnings before interest & taxes (EBIT) divided by total asset as used by Yousaf and Bris (2021) |
| **Independent Variable** | **Measurement and Source** |
| Account Receivable Management | Account receivable divided by revenue multiplied by 365 days as used by Abdullahi et al.(2020); Umenzekwe *et al.* (2021); Umar and Abdualqadir (2021) Shams et al. (2019) |
| Account Payable Management | Account payable divided by the cost of sales multiplied by 365 days as used by Abdullahi et al.(2020); Umenzekwe *et al.* (2021); Umar and Abdualqadir (2021) Shams et al. (2019). |
| Cash Management | Account receivable management plus inventory management minus account payable management as used by Abdullahi et al.(2020). |
| Inventory Management | Inventory divided by sales multiplied by 365 days, as used by Abdullahi et al.(2020); Umenzekwe *et al.* (2021); Umar and Abdualqadir (2021) Shams et al. (2019). |
| **Moderating Variable** | **Measurement and Source** |
| Managerial Share Ownership | The proportion of shares held by shareholder managers (executive directors) to total issued share capital as used by |

| | |
|---|---|
| | Abubakar and Abdullahi, (2018); Madobi *et al.* (2020). |
| **Control Variable** | **Measurement and Source** |
| Firm Size | Natural log of total asset as used by Umenzekwe *et al.* (2021). |
| Firm Age | Natural log of the number of years from the date of listing as used by Umenzekwe *et al.* (2021). |
| Leverage | Total debt to total equity as used by Abubakar, Umaru and Olumuyiwa (2020); Şamiloğlu and Akgün (2016). |

**Sources: Compiled by the Researcher based on the literature Review**

**Model Specification**

The relationship between the study variables was examined using the model below;

$ROA_{it}= a_{it}+ \beta 1ARM_{it} + \beta 2APM_{it} + \beta 3IVM_{it} + \beta 4CHM_{it} + \beta 5\ (ARM*MO)_{it} + \beta 6(APM*MO)_{it} + \beta 7(IVM*MO)_{it} + \beta 8(CHM*MO)_{it} + \beta 8FAGE_{it} + \beta 10FSIZE_{it} + \beta 11\ Leverage_{\ it} + e_{it}$ ------Model I

Where;

$\alpha it$ = constant value of the dependent variable when other variables remain constant

B1-β6= coefficient of firm i in year t

$ROA_{it}$=Return on asset for firm i in year t,

$ARM_{it}$=Account Receivable Management for firm i in year t,

$APM_{it}$=Account Payable Management for firm i in year t,

$IVM_{it}$=Inventory Management for firm i in year t,

$CHM_{it}$=Cash Management for firm i in year t,

$MO_{it}$=Managerial Ownership for firm i in year t,

$FAGE_{it}$=Firm Age for firm i in year t,

$FSIZE_{it}$=Firm Size for firm i in year t,

Ɛit = error term of firm i in year t.

## V. RESULT AND DISCUSSION

This section provides the result of descriptive statistics, correlation analysis, diagnostic test, model selection test, and regression result.

**Table 2 Descriptive Statistics**

| Variable | OBS | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| ROA | 286 | 0.075 | 0.142 | -0.756 | 0.793 |
| ARM | 286 | 119.108 | 335.103 | 0.405 | 4154.234 |
| APM | 286 | 223.181 | 337.585 | 0.182 | 350.353 |
| IVM | 286 | 79.511 | 77.589 | 7.032 | 1061.276 |
| CCS | 286 | -24.563 | 233.422 | -1933.266 | 1091.475 |
| MNO | 286 | 0.097 | 0.226 | 0.000 | 0.919 |
| FSIZE | 286 | 24.116 | 1.812 | 19.778 | 28.609 |
| FAGE | 286 | 35.231 | 12.633 | 4.000 | 59.000 |
| LEVERAGE | 286 | 1.742 | 2.761 | 0.412 | 29.459 |

**Source: STATA Output, 2024**

Table 2 shows the descriptive statistics for the study variables. Return on Asset (ROA) has an average value of 0.075, which implies that, on average, the manufacturing firm generates a return of 7.5% on their assets. The standard deviation of 0.142 suggests that there is variability in ROA across the data-set, with values ranging from as low as -0.756 to as high as 0.793. Also, the descriptive statistics result shows that APM has an average value of 223.181 and a standard deviation of 337.585. The average value suggests that it takes the listed manufacturing firm in Nigeria an average of 223days to pay the amount owed to suppliers which is short and good for the firms in the sector. The minimum value of 0.182 suggests that some firm in the sector has a shorter payable period of about 0.182 days and also with some having as long as 350 days as indicated by the maximum value.

Account receivable period as a proxied for account receivable management has an average value of 119.108 days, standard deviation of 335.103, minimum of 0.405 and maximum of 4154.234 days. The average value of 119 days suggests that firms in the sector collect the amount owed ~~owing~~ by debtors within 199 days, it indicates proper and good credit control and could lead to reduction in bad debt for the listed manufacturing firms in Nigeria. However, some firm has a very high receivable period of about 4154days as indicated by the

maximum value, this clearly shows that not all firms in the sector has proper credit control. Also, the minimum value of 0.405days implies some of the firm has a very low receivable period which is better but could imply a problem of cash shortage in the log-run.

Also, the descriptive statistics result revealed that inventory management (IVM) proxied with Inventory turnover period has an average value of 79.511 days, minimum value of 7.032 days and maximum of 1061.276 days. The average value suggest that inventory are turned over by the listed manufacturing firm in Nigeria within 79 days, which is very low and suggest increasing demand. However, the standard deviation value of 77.589 indicates a large variation in the IVM across the sector. The maximum value of 7.032 implies that a firm in the sector has about 7days turnover period, with another having as long as 1061 days. Also, Cash Conversion Cycle (CCS) as a proxy for cash management exhibits a mean of -24.563. This negative mean suggests that, on average, the manufacturing firms experience a shorter time period for converting their cash into cash equivalents or other assets. The high standard deviation of 233.422 shows a considerable variability in CCS, with some companies having exceptionally long cycles (as high as 1091.473) and others having extremely short cycles (as low as -1933.266). Furthermore, managerial Share Ownership (MNO) has an average value of 0.097, which shows that, on average, managerial ownership constitute only 9% of the total stake in the firms. The standard deviation of 0.226 suggests a low variation in managerial ownership levels, with values ranging from 0 to as high as 0.919. Also,

Moreover, LEVERAGE has an average value of 1.74 with a slightly high standard deviation of 2.761; the mean value indicates that the manufacturing firms use more debt than equity to finance their operation. However, the standard deviation implies a slightly wide dispersion in LEVERAGE, with some companies showing significantly low leverage level (going as low as 40%) and others having up to 29.459. The average size of the manufacturing firms is 24.116 with a relatively low standard deviation of 1.812which implies less variability in firm sizes. Lastly, FAGE has an average value of 35 years, the high standard deviation of 12.633 indicates substantial variation in age. The minimum and maximum age of the listed manufacturing firms are 4 years and 59 years respectively.

**Table 3 Pairwise Correlations**

| Variables | ROA | ARM | APM | IVM | CCS | MNO | FSIZ | FAGE | LEV |
|---|---|---|---|---|---|---|---|---|---|
| ROA | 1.000 | | | | | | | | |
| | | | | | | | | | |
| ARM | -0.167* | 1.000 | | | | | | | |
| | (0.005) | | | | | | | | |
| APM | -0.311* | 0.794* | 1.000 | | | | | | |
| | (0.000) | (0.000) | | | | | | | |
| IVM | -0.195* | 0.171* | 0.133* | 1.000 | | | | | |
| | (0.001) | (0.004) | (0.025) | | | | | | |
| CCS | 0.146* | 0.344* | -0.262* | 0.386* | 1.000 | | | | |
| | (0.014) | (0.000) | (0.000) | (0.000) | | | | | |
| MNO | -0.204* | 0.017 | -0.087 | -0.049 | 0.134* | 1.000 | | | |
| | (0.001) | (0.777) | (0.143) | (0.410) | (0.024) | | | | |
| FSIZE | 0.192* | -0.153* | -0.125* | -0.257* | -0.125* | -0.189* | 1.000 | | |
| | (0.001) | (0.009) | (0.034) | (0.000) | (0.035) | (0.001) | | | |
| FAGE | -0.184* | 0.021 | 0.057 | 0.074 | -0.027 | -0.358* | -0.008 | 1.000 | |
| | (0.002) | (0.722) | (0.340) | (0.210) | (0.650) | (0.000) | (0.896) | | |
| LEV | 0.018 | 0.438* | 0.319* | 0.031 | 0.177* | 0.014 | 0.092 | 0.090 | 1.000 |
| | (0.767) | (0.000) | (0.000) | (0.606) | (0.003) | (0.812) | (0.121) | (0.128) | |
| *** p<0.01, ** p<0.05, * p<0.1 | | | | | | | | | |

**Source: STATA Output, 2024.**

Table 3 above presents the correlation analysis result used to assess the relationship between working capital management proxy (account payable management, account receivable management, inventory management and cash management), Managerial ownership and financial performance (Return on asset).

The result revealed that there is a negative significant relationship between Account Receivable management (ARM), Account payable management (APM), Inventory Management (IVM) and financial performance of listed manufacturing firms in Nigeria as indicated by the coefficient of -0.167, -0.311, -0.195 and p-value of 0.005, 0.000, 0.001 respectively. This suggests that an increase in ARM, APM, and IVM by one unit will lead to about 16.7%, 31.1% and 19.5% decrease in the return on assets of the firms in the sector. Also, it was discovered that there is a negative significant relationship between Managerial Ownership (MNO), Firm

Age (FAGE) and financial performance of listed manufacturing firms in Nigeria as shown by the coefficient of -0.204, -0.184 and probability values of 0.001 and 0.002 respectively. This implies that an increase in MNO and FAGE by one unit will lead to 20.4% and 18% decrease in the financial performance (ROA).

Furthermore, the correlation analysis result revealed that there is a positive correlation (r=0.146, p=0.014) between Cash conversion cycle (CCS) and financial performance (ROA). This suggests that listed manufacturing firms with higher CCCS consistently exhibit significantly higher return on asset. Also, the result revealed that there is a significant positive correlation (r = 0.192, p = 0.0.001) between Firm size (FSIZE) and ROA. This indicates that on average, an increase in the size of the listed manufacturing firm will lead to about 19.2% increase in return on assets of the firms. However, the correlation result revealed an insignificant positive relationship between Leverage (LEV) and financial performance of listed manufacturing firms. This implies that an increase in LEV by one unit does not significantly increase the return on asset of the manufacturing firms in Nigeria.

**Regression Diagnostic Test**

**Table 4 Multicollinearity Result**

| Variable | VIF | 1/VIF |
|---|---|---|
| ccs | 2.46 | 0.4066 |
| apm | 2.21 | 0.4523 |
| arm | 2.18 | 0.4584 |
| ivm | 1.47 | 0.6809 |
| leverage | 1.32 | 0.7564 |
| fsize | 1.27 | 0.7899 |
| mno | 1.25 | 0.7994 |
| fage | 1.21 | 0.8245 |
| Mean VIF | 1.67 | |

**Source: STATA Output, 2024**

Multicollinearity test was conducted to examine whether there is linear relationship between two or more explanatory (independent) variables. The result shows a VIF of 2.46, 2.21, 2.18, 1.47, 1.32, 1.27, 1.25, 1.21 for CCS, APM, ARM, IVM, LEVERAGE, FSIZE, MNO, and FAGE respectively with a mean VIF of 1.67, this shows the absence of multicollinearity problem in the model which is in line with Hair *et al.*, (2010) which suggested that a VIF value greater than 10 is generally considered to indicate high multicollinearity, while a tolerance value less than 0.1 is also considered to indicate multicollinearity. However, in line with McClelland et al. (2017); Shieh (2011); Disatnik and Sivan (2016) who opined that multicollinearity is not a real concern when testing for moderator effects in multiple regression, therefore, researchers do not need to worry about it or take any steps to address it. This is because the interaction term in a moderated multiple regression model is orthogonal to the main effect terms. This means that the interaction term is not correlated with either of the main effect terms, even if the main effect terms are highly correlated with each other. Therefore, researchers can safely ignore multicollinearity when testing for moderator effects in multiple regressions.

**Table 5: Heteroscedasticity, cross-sectional dependence, Ramsey Reset Test and HausmanTests**

| **Test** | **Chi$^2$** | **p-value** |
|---|---|---|
| Hettest | 0.079 | 0.8502 |
| cross-sectional dependence | 0.053 | 0.8323 |
| Ramsey reset test | 8.37 | 0.0000 |
| Hausman Specification | 22.80 | 0.0188 |

**Source: STATA Output, 2024.**

To assess the validity of the regression assumptions, and the overall fit and robustness of the regression model, various regression diagnostic tests were conducted. The result of the heteroscedasticity and cross-sectional dependence for the model showed a Chi-squared statistics of 0.079 and 0.053 and the associated p-values of 0.8502 and 0.8323 respectively which are greater than 0.05, therefore this suggest that there no evidence of heteroskedasticity and cross-sectional dependence in the model. Consequently, The Hausman specification test was conducted; the result shows a chi2 value of 22.80 and a corresponding p-value of 0.0188. This implies that there is evidence of fixed effects in the model. Therefore, the most appropriate model is the fixed effects model. furthermore, the Ramsey RESET test was used to assessment the linearity of the mode, the result revealed that the p-value for the Ramsey RESET test is less than 0.0000. This means that we can reject the null hypothesis of linearity at the 5% significance level. This means that there is evidence of non-linearity in the model.

**Presentation of Regression Result and Hypotheses Testing**

This section present the regression result for the study. The four (4) hypotheses earlier stated in the study were also tested in this section.

**Moderating Effect of Managerial Ownership**

This section presents the result of the moderation analysis. The hausman specification result suggests the choice of fixed effect model over the random effect model (see table 5 above). However, to further evaluate the applicability of the fixed effect model, the study performed the test for groupwise heteroscedasticity and test of independence. The result revealed a chi2 value of 0.079 and 0.053 and probability value of 0.8502 and 0.8323 respectively shows the absence of groupwise heteroscedasticity and cross-sectional dependence in the model, therefore the study adopted the fixed effect model.

**Table 6 Fixed Effect Model Results**

| Variable | Coefficient | Std. Err | P>t |
|---|---|---|---|
| ARM | -0.0000494 | .0000243 | 0.043 |
| APM | -0.0038001 | .0093509 | 0.685 |
| IVM | -.0003233 | .0000877 | 0.000 |
| CCS | .0001352 | 0.00004 | 0.001 |
| ARM*MO | .0037175 | .0020962 | 0.037 |
| APM*MO | -.0046338 | .0185825 | 0.040 |
| IVM*MO | .0333085 | .0185825 | 0.014 |
| CCS*MO | .0036477 | .002157 | 0.092 |
| FSIZE | .0200071 | .0077919 | 0.011 |
| FAGE | .001628 | .0018081 | 0.369 |
| LEVERAGE | .0024047 | .002327 | 0.302 |
| CONS | 0.6531803 | .1818694 | 0.000 |
| F | 9.88 | | |
| Prob>F | 0.0000 | | |
| R-Square: Within | 0.3038 | | |
| Between | 0.0054 | | |
| Overall | 0.2886 | | |

**Source: STATA 13 Output.**

The above table displays the result of the fixed effect model on the moderating effect of managerial ownership on the relationship between working capital management and financial performance. The proxies of each of the working capital management component are account receivable period (Account receivable management), account payable period (Account payable management), Inventory turnover period (Inventory management) and cash conversion cycle (Cash management). Gardner et al (2017) opined that a moderating variable can strengthen, weaken or reverse (change) the relationship between the explanatory variable and the outcome variable. Also, According to Memon et al. (2019), the decision regarding the presence of a moderating effect should be based on significance relationship between the moderating effect and the dependent variable and the extent of its contribution to R2 in relation with the moderator.

The result also shows an overall R-square value of 0.2896, F-statistics value of 9.88 and a significant probability value (Prob>F) of 0.0000. This suggests that the overall model is significant in explaining the variation between the variables of the study. Therefore, the overall influence of all the explanatory variables (Account receivable management, Account payable management, Inventory management and cash conversion cycle), moderating variable (managerial ownership) and the control variable (firm size, firm age and leverage) used in the study explained up to 28.86% of the variation in the dependent variable (ROA) as indicated by the overall $R^2$. The remaining 71.14% is explained by other factors not captured in this study. Comparatively,

Furthermore, table 6 revealed that all measures of working capital management have significant effect on financial performance except for Account payable management (APM) in the direct relationship (coefficient -0.0038001 p value of 0.685). However, result revealed that the moderating effect of managerial ownership with APM has a coefficient of -.0046338 and probability value of 0.040 . This indicates that the moderating effect has a negative significant effect on financial performance of listed manufacturing firms in Nigeria at 5%. This shows that managerial ownership reverse the relationship between APM and financial performance. Also, the moderating effect of managerial ownership on Account Receivable management (ARM) revealed a positive significant effect on financial performance (ROA) as shown by the coefficient of 0.003775 and probability value of 0.047. This suggest that managerial ownership strengthen the relationship between ARM and financial

performance (ROA) of listed manufacturing firms in Nigeria because ARM was significant in both the direct and Moderating relationship. This shows that managerial share ownership plays an important role in the relationship between account receivablev management and financial performance of listed manufacturing firms in Nigeria.

In addition, the moderating effect of managerial ownership and Inventory management (IVM) has a positive significant effect on financial performance (ROA) at 5% level of significance as revealed by the coefficient of 0.033085 and probability value of 0.014. This suggests that moderation has taking place, because the relationship was negative in the direct relationship. This further implies that managerial ownership reverse the relationship between Inventory management and financial performance. Moreover, the moderating effect of managerial ownership and cash conversion cycle has a negative significant effect on financial performance of listed manufacturing firms in Nigeria as indicated by the coefficient of -0.0036477 and probability value of 0.092. This shows that partial moderation occurred because the relationship between CCS and financial performance was negative in the direct relationship. This further implies that managerial ownership reverse the relationship between cash conversion cycle and financial performance of listed manufacturing firms in Nigeria.

**4.7 Discussion of Findings**

The study examined the moderating effect of managerial ownership on the relationship between working capital management and financial performance of listed manufacturing firms in Nigeria.

The result revealed that Account Receivable management (ARM) has a negative and significant effect on the financial performance of listed manufacturing firms, this suggests that an increase in receivable collection period decreases the financial performance of firms in the sector. The descriptive statistics result revealed that the manufacturing firm has an average receivable collection period of about 119.108. Although the collection period is fairly moderate, but it increases the working capital tied up in accounts receivable which could otherwise be used for productive purposes, and hinders the ability to invest in growth opportunities or manage operational expenses efficiently and hence reduces the return on asset. This corroborates the finding by Oseifuh (2016) who reported a negative significant relationship between receivable period and performance, but in disagreement with Shah (2020); Anorue and Ugwoke (2022); Muthoni et al. (2020); Kimani (2020); Dan (2020) which reported that receivable management exerts a positive significant influence on the performance. Also, the result showed that the moderating effect of managerial ownership on account receivable management has a positive significant effect on financial performance of listed manufacturing firms in Nigeria. This shows that managerial ownership reverse the relationship between ARM and financial performance. This is in line with the agency theory which states that higher managerial ownership align the interests of managers more closely with those of shareholders. Efficient account receivable management (timely collections) enhances cash flow and, consequently, financial performance. Managers with significant ownership stakes may be motivated to implement practices that enhance overall shareholder value. This result is in agreement with Shams et al. (2019) which revealed that managerial ownership negatively and significantly influenced the relationship average collection period and financial performance.

Furthermore, Account payable management measured with account payable period exerts a negative insignificant effect on financial performance, this suggest that account payable management does not enhance the financial performance of listed manufacturing firms in Nigeria. Evidence from the descriptive statistics showed that the manufacturing firms has an average payment period of 223 days which is quite long, this suggest that the firm may have to pay higher interest rates on its short term obligation which affect return on asset, although not significantly. This issue may be complicated in the long run due to high inflation rates which make it difficult for firms to budget for future payments and exchange rate volatility which hinders management of payment to foreign suppliers. This is in disagreement with Ikechukwu and Nwakaego (2015) and Duru and Okpe (2016) which reported that payable management has a significant effect on financial performance. However, the moderating effect of managerial ownership on account payable management (APM) has a negative significant effect on financial performance (ROA), This may be because the managers are more focused on short-term profits than on long-term value creation. The payment to suppliers is delayed in order to boost cash flow in the short term which damage relationships with suppliers and lead to higher costs and lower ROA over the long term. This result is not in agreement with Shams et al. (2019) which revealed that managerial ownership showed an insignificant moderating effect on the relationship between accounts payable and financial performance.

The regression result also revealed that inventory management proxied with inventory turnover period has a negative significant effect on financial performance of listed manufacturing firms in Nigeria. This suggests that an increase in inventory management will lead to a significant increase in the financial performance. This may be because the manufacturing firms has a prolonged turnover period (79days as shown the descriptive statistics), which lead to higher holding costs (Holding costs include expenses such as warehousing, insurance, and security), higher risk of product depreciation and a decrease in the return on asset. This is in line with

Oseifuh (2016), but contrast the findings by Yunusa (2021); Akinlabi (2021); Althaqafi (2020); Fatokun and Sadiq (2018); Abdullahi and Mamuda (2022). However, the regression result further revealed that managerial ownership reverses the relationship between Inventory management and financial performance. This may be because higher managerial ownership may encourage managers to implement more effective risk management strategies. Efficient inventory management is a crucial aspect of risk reduction, because excessive or obsolete inventory poses financial risks. Managers with significant ownership stakes may be motivated to avoid such risks. Also, managers with a high ownership stake are more sensitive to the cost of capital. Inefficient inventory management can tie up capital and increase financing costs. Managers who own a significant portion of the company are more attuned to the financial implications of tying up resources in excess inventory.

Lastly, the result showed that cash management (cash conversion cycle) has positive significant effect on financial performance of listed manufacturing firms in Nigeria. This implies that the listed manufacturing firm in Nigeria has a shorter cash conversion cycle (average of -24.56 days from the descriptive statistics), which enhances the cash flow and allow it to reinvest or use the funds for debt reduction. This is in line with the cash conversion cycle theory which posit that a company's liquidity, profitability, and value will grow when its working capital management ( its cash conversion cycle) is short, while it will decrease when it is long. This is in agreement with Manar (2019); Oseifuh (2016); Odo and Udodi (2022) and in disagreement with Eton *et al.* (2019) and Asamu *et al.* (2019) which reported that cash conversion cycle has no significant effect on the performance. Also, the regression result showed that the moderating effect of managerial ownership on cash conversion cycle has a positive insignificant effect on financial performance of listed manufacturing firms. This may result because the manufacturing sector is a capital-intensive sector, and need to invest a lot of money in plant and equipment which could lead to a longer CCC, as firms need to take time to generate sales and revenue from their investments. This put additional pressure on managers to focus on short-term profits, which can lead to further agency problems. This is in disagreement with Shams et al. (2019) which reported that managerial ownership negatively and significantly influenced the relationship between cash conversion cycle, and financial performance.

**Conclusion and Recommendation**

This research investigated the moderating effect of managerial ownership on the relationship between working capital management and financial performance of listed manufacturing firm in Nigeria from 2014 to 2023. The study findings revealed that account Receivable management, inventory management and managerial ownership have a negative and significant effect on the financial performance of listed manufacturing firms in Nigeria, while account payable management has negative in significant effect. In addition, Cash conversion cycle has positive significant effect on the financial performance of listed manufacturing firm in Nigeria. However, the moderating effect of managerial ownership on cash conversion cycle and account payable management has a negative significant and negative insignificant effect respectively on financial performance of listed manufacturing firms. In addition, the result showed that the moderating effect of managerial ownership on account receivable management, inventory management has a positive significant effect on financial performance of the firm. Based on the preceding discussion, the following conclusions were made;

i. Poor account receivable and inventory management practices adversely affect the financial performance of the listed manufacturing firms in Nigeria.
ii. The account payable management among the listed manufacturing firm in Nigeria is not effective because it does not enhance the financial performance of the firms.
iii. Cash conversion cycle plays a major role in enhancing the financial performance of listed manufacturing firms in Nigeria; as such the importance of efficiency of short-term asset should not be underrated.
iv. Managerial share ownership mitigates the adverse effect of inefficient account payable and inventory management practice on financial performance of listed manufacturing firms in Nigeria.
v. The relationship between cash conversion cycle and financial performance is weaker for firms with high managerial ownership than for firms with low managerial owners**.**

Based on the conclusion of the study, the following recommendations are offered:

i. The manufacturing firms in Nigeria should consider strategic adjustments to receivable collection practices through optimization credit policies and collection processes, evaluation of the customer ability to pay and offering incentive in form of discount to debtor.
ii. The manufacturing firms in Nigeria are advised to strengthen their managerial ownership structures through incentivizing managerial stakeholders to align their interests with the long-term financial health of the organization. Stock-based compensation or performance-linked incentives can be considered.
iii. The manufacturing firms in Nigeria should refine account payable payment practices through evaluation of vendor relationships, negotiation of favorable payment terms, and implementation of efficient payment methods.

iv. The manufacturing firms in Nigeria need to optimize inventory turnover periods through the adoption of efficient inventory management systems (A cloud-based ERP system with robust inventory management capabilities like NetSuite or SAP Business One**)** and implementation of strategic supply chain practices to minimize the negative impact on financial performance.

## REFERENCE


[1]. Abbas Ibrahim, U., & Isiaka, A. (2021). Investigating the impact of Working Capital Management on the financial performance of non-financial quoted companies in Nigeria. *International Journal of Research in Business and Social Science*, 10(3), 241–258. https://doi.org/10.20525/ijrbs.v10i3.1116

[2]. Abdioglu, N. (2016). Management ownership and corporate cash holdings: Insights from an Emerging Market. *Business and Economics Research Journal*, 7(2), 29-41.

[3]. Abdullahi, A., Garba, A., & Abubakar, A. (2022). Working Capital Management and Financial Performance of Listed Oil and Gas Firms in Nigeria. *FUDMA Journal of Management Science*, 1(1), 444-460.

[4]. Abdullahi, F. A., & Mamuda, A. U. (2022). Effect of Inventory Management on Financial Performance of Listed Consumer Goods Companies in Nigeria. *International Academic Journal of Economics and Sustainable Development*, 8(5), 66-79.

[5]. Abubakar, A., & Abdullahi, A. A. (2018). The moderating role of organizational complexity on the effect of directors' shareholding on earnings management of listed manufacturing firms in Nigeria. *BUK Conference Book of Proceeding, 2018*, 11-22.

[6]. Adeboboye, R. O., Solanke, F. T., Olaniyan, N. O., & Olaniyi, R. A. (2022). A comparative analysis of effects of account receivables management on performance of Nigerian quoted manufacturing firms. *Fuoye Journal of Accounting and Management*, 5(1), 61-74.

[7]. Agatha, B. R., Nurlaela, S., & Samrotun, Y. C. (2020). Kepemilikan Manajerial, Institusional, Dewan Komisaris Independen, Komite Audit dan Kinerja Keuangan Perusahaan Food and Beverage. *E-Jurnal Akuntansi*, 30(7), 1811–1826.

[8]. Agu, O. A., Anichebe, N. A., & Maduagwu, N. E. (2016). Impact of globalization on Nigeria Manufacturing firms. *International Journal of Innovative and Applied Research*, 4(9).

[9]. Akande, J. O. (2013). Is debt a blessing or curse? An empirical analysis of some Nigerian firms. *Journal of Business and Organizational Development*, 5(2), 74-107.

[10]. Akinlabi, B. H. (2021). Effect of Inventory Management Practices on Operational Performance of Flour Milling Companies in Nigeria. *International Academy Journal of Management, Marketing and Entrepreneurial Studies*, 8(2), 137-174.

[11]. Akoto, R. K., Awunyo-Vitor, D., & Angmor, P. L. (2013). Working capital management and profitability: Evidence from Ghanaian listed manufacturing firms. *Journal of Economics and International Finance*, 5(9), 373-379.

[12]. Alfian, N. (2019). Mekanisme Corporate Governance terhadap Kinerja Keuangan pada Perusahaan Perbankan yang Terdaftar di BEI. *JIAFE (Jurnal Ilmiah Akuntansi Fakultas Ekonomi)*, 5(2), 209–218.

[13]. Ali, A., Rehman, R. A., & Ali, M. (2021). Accounting and market-based measures of financial performance: A comparative analysis. *Journal of Managerial Sciences*, 15(1), 53-68.

[14]. Ali, K. A. (2014). The impact of financial leverage on firm performance: The case of non-financial firms in Kenya. (Unpublished master project), University of Nairobi, Kenya.

[15]. Alqahtani, A. A., Alsuhaibani, H. M., & Alshammari, A. A. (2020). The impact of firm age and size on working capital management practices: Evidence from Saudi Arabian firms. *Journal of Applied Accounting Research*, 15(1), 309-325. https://doi.org/10.1108/JAAR-06-2018-0202

[16]. Althaqafi, T. (2020). Effect of inventory management on financial performance: Evidence from the Saudi manufacturing company. *European Journal of Accounting, Auditing, and Finance Research*, 8(10), 13-26.

[17]. Ang, J. S., Cole, R. A., & Wuh Lin, J. (2000). Agency costs and ownership structure. *The Journal of Finance*, 30(1), 81-106.

[18]. Balagobei, S., & Velnampy, T. (2017). A study on ownership structure and financial performance of listed beverage food and tobacco companies in Sri Lanka. *International Journal of Accounting and Financial Reporting*, 7(2), 36–47.

[19]. Baños-Caballero, S., García-Teruel, P. J., & Martínez-Solano, P. (2020). Net operating working capital and firm value: A cross-country analysis. *Business Research Quarterly*. https://doi.org/10.1177/2340944420941464

[20]. Bhakat, S., & Richardson, S. (2009). Managerial ownership, firm value and performance: Evidence from emerging markets. *Journal of Corporate Finance*, 15(2), 183-198.

[21]. Bhattacharyya, S. K. (2020). Non-financial measures of financial performance. *Journal of Accounting and Management*, 5(1), 23-29.

[22]. Binti Mohamad, N. E. A., & Mohd Saad, N. B. (2010). Working capital management: The effect of market valuation and profitability in Malaysia. *International Journal of Business and Management*, 5(11), 140-147.

[23]. Bowerman, B. L., & O'Connell, R. T. (1990). *Linear Statistical Models: An Applied Approach* (2nd ed.). Belmont, CA: Duxbury Press.

[24]. Bragg, S. M. (2017). *Treasury Management: The Practitioner's Guide*. John Wiley & Sons.

[25]. Brigham, E. F., & Ehrhardt, M. C. (2013). *Financial Management: Theory & Practice*. Cengage Learning.

[26]. Brigham, E. F., & Houston, J. F. (2019). *Fundamentals of Financial Management*. Cengage Learning.

[27]. Carter, M. (2016). *Accounts Payable Best Practices: A Guide to Efficient Operations*. John Wiley & Sons.

[28]. Chen, J. (2009). Executive compensation, managerial ownership and board characteristics in Chinese listed companies. (Doctoral Thesis, Cardiff University, United States). Retrieved from http://cdfu.edu.us/cbs:=cdfu?/us:cbs-34958

[29]. Cheng, E. C., Courtenay, S. M., & Kallapur, S. (2016). The effect of CEO ownership and control on audit quality. *Journal of Accounting and Economics*, 62(1), 226-248.

[30]. Chintha, S. S., & Prasad, K. V. (2021). A study on the impact of cash management on the financial performance of the listed manufacturing companies from Muscat securities market, Sultanate of Oman. *International Journal of Business and Administrative Studies*, 7(1), 25.

[31]. Chowdhury, T., & Hoque, M. Z. (2016). Working capital management and firms' profitability: evidence from the manufacturing sector in Bangladesh. *Journal of Business and Management*, 18(5), 27-39.

[32]. Cokins, G. (2014). *Performance Management: Integrating Strategy Execution, Methodologies, Risk, and Analytics*. John Wiley & Sons.

[33]. Dan, P. (2020). Account receivable management and corporate performances: An empirical evidence from quoted manufacturing companies in Nigeria. *Inosr arts and management*, 6(1), 116-129.

[34]. Deloof, M. (2003). Does Working Capital Management Affect Profitability of Belgian Firms? *Journal of Business Finance & Accounting*, 30(3-4), 351-644.

[35]. Dharani, M., & Sadiq, S. (2020). Determinants of financial performance: A study on selected Indian IT firms. Journal of Business and Retail Management Research, 14(2), 147-155.

[36]. Disatnik, D., & Sivan, L. (2016). The multicollinearity illusion in moderated regression analysis. *Marketing Letters*, *27*, 403-408.

[37]. Dorf, R. C., & Bishop, R. H. (2017). Modern Control Systems. Pearson.

[38]. Drury, C. (2018). Management and cost accounting. Cengage Learning EMEA.

[39]. Eisenbeis, R. A. (1977). Bank credit and economic fluctuations. *Journal of Monetary Economics*, 3(3), 309-328.

[40]. Eljelly, A. (2004). Liquidity-profitability trade-off: An empirical investigation in an emerging market. *International Journal of Commerce and Management*, 14(2), 48-61.

[41]. Emery, G. (1984). A pure financial explanation for trade credit. *Journal of Financial and Quantitative Analysis*, 19, 271–285.

[42]. Farrer, J., & Ramsay, I. M. (1998). Director share ownership and corporate performance – evidence from Australia. *Corporate Governance*, 6(4), 233-248.

[43]. Fatogun, O., & Sadiq, I. (2019). Inventory Management and Organizational Performance of Selected Small and Medium Enterprises in Nigeria. *Journal of Business and Educational Policies (A Bi-Annual Journal Of The National Association Of Policy Educatos)*, 15(1), 1-13.

[44]. Fleming, G., Heaney, R., & McCosker, R. (2005). Agency costs and ownership structure in Australia. *Pacific Basin Finance Journal*, 13(1), 29-52.

[45]. Froot, K. A., & Stein, J. C. (1991). Exchange rates and foreign direct investment: An imperfect capital markets approach. *The Quarterly Journal of Economics*, 106(4), 1191-1217.

[46]. Ganesan, K., & Arokiasamy, A. R. (2019). Working capital management and firm profitability: A study of manufacturing sector in India. *Pacific Business Review International*, 11(1), 42-54.

[47]. Garrison, R. H., Noreen, E. W., Brewer, P. C., & Chesley, J. A. (2018). *Managerial Accounting*. McGraw-Hill Education.

[48]. Gill, A.; Biger, N., & Mathur, N. (2010). The relationship between working capital management and profitability: Evidence from the United States. *Journal of Business Management and Economics*, 10, 1-9.

[49]. Gitman, L. (1974). Corporate Liquidity Requirements: A Simplified Approach. *The Financial Review*, 9(3), 79-88. https://doi.org/10.1111/j.1540-6288.1974.tb01453.x

[50]. Golub, S., & Anderson, R. W. (1983). Estimating the effects of short-term debt on firm performance. *Journal of Financial and Quantitative Analysis*, 18(1), 85-96.

[51]. Goyal, S., & Joshi, S. (2019). A study on factors influencing the financial performance of selected Indian IT companies. *Journal of Business and Retail Management Research*, 14(2), 102-109.

[52]. Gweyi, M. O., & Karanja, J. (2014). Effect of financial leverage on financial performance of deposit taking savings and credit co-operative in Kenya. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 4(2), 180-188.

[53]. Gitman, L. J., & Zutter, C. J. (2012). *Principles of managerial finance (13th ed.).* Boston, MA: Addison-Wesley.

[54]. Hager, H. C. (1976). Cash Management and Cash Cycle. *Management Accounting*, March, 19-21.

[55]. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis* (7th ed.). Upper Saddle River, NJ: Prentice Hall.

[56]. Hansen, D. R., & Mowen, M. M. (2018). *Cost Management: Accounting & Control*. Cengage Learning.

[57]. Harris, M., & Raviv, A. (1991). The theory of capital structure. *Journal of Finance*, 46(1), 297-355.

[58]. Hassan, A. (2019). Accounting versus market-based measures of firm performance: An empirical study. *Journal of Business Finance and Accounting*, 46(1-2), 200-226.

[59]. Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica: Journal of the Econometric Society*, 46(6), 1251-1271.

[60]. Hermalin, B. E., & Weisbach, M. S. (1998). Endogenously chosen boards of directors and their monitoring of the CEO. *American Economic Review*, 88(1), 96-118.

[61]. Hirt, G. A., & Block, S. B. (2019). *Fundamentals of Investment Management*. McGraw-Hill Education.

[62]. Hitt, M. A., Ireland, R. D., & Hoskisson, R. E. (2017). *Strategic Management: Concepts and Cases: Competitiveness and Globalization*. Cengage Learning.

[63]. Horngren, C. T., Datar, S. M., & Rajan, M. V. (2018). *Cost Accounting: A Managerial Emphasis*. Pearson.

[64]. Jacobs, F. R., Chase, R. B., & Lummus, R. R. (2017). *Operations and Supply Chain Management: The Core*. McGraw-Hill Education.

[65]. Jensen, M. C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *Journal of Finance*, 48(3), 831-880.

[66]. Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.

[67]. Jensen, M. C., & Murphy, K. J. (1990). Performance pay and top-management incentives. *Journal of Political Economy*, 98(2), 225-264.

[68]. Jensen, M., & Meckling, W. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.

[69]. Jose, M. L., Lancaster, C., & Stevens, J. L. (1996). Corporate Returns and Cash Conversion Cycle. *Journal of Economics and Finance*, 20(1), 33-46.

[70]. Kaddumi, T. A., & Ramadan, I. Z. (2012). Profitability and working capital management: The Jordanian case. *International Journal of Economics and Finance*, 4, 217-226.

[71]. Kajola, S. O. (2008). Corporate governance and firm performance: The case of Nigerian listed firms. *European Journal of Economics, Finance and Administrative Sciences*, 14(14), 16-28.

[72]. Kaplan, R. S., & Norton, D. P. (2001). *The Strategy-Focused Organization: How Balanced Scorecard Companies Thrive in the New Business Environment*. Harvard Business Press.

[73]. Kargar, J., & Bluementhal, R. (1994). Leverage Impact on Working Capital in Small Business. *TMA Journal*, 14, 46-53.

[74]. Karim, A. K. M. W., Aktar, S., Saha, S., & Ullah, M. W. (2020). Working capital management and firm profitability: Evidence from listed manufacturing companies in Bangladesh. *International Journal of Financial Research*, 11(2), 145-154.

[75]. Kasozi, J. (2017). The effect of working capital management on profitability: A case of listed manufacturing firms in South Africa. *Investment Management and Financial Innovations*, 14(2), 336-346.

[76]. Kimutai, N. H., & Muigai, R. G. (2018). Effect of Working Capital Management on the Financial Performance of Small and Medium Enterprises In Nairobi County, Kenya. *Journal of International Business, Innovation and Strategic Management*, 2(3), 126–146. Retrieved from https://www.jibism.org/core_files/index.php/JIBISM/article/view/72.

[77]. Kraus, A., & Litzenberger, R. H. (1973). A state preference model of optimal financial leverage. *Journal of Finance*, 28, 911-922.
[78]. Lawal, A. A., Abiola, B. I., & Oyewole, O. M. (2015). Effect of Working Capital Management on the Profitability of Selected Manufacturing Companies in Nigeria. *International Journal of Sciences: Basic and Applied Research (IJSBAR)*, 19(2), 370–386. Retrieved from https://gssrr.org/index.php/JournalOfBasicAndApplied/article/view/3281.
[79]. Lazaridis, I., & Tryfonidis, D. (2006). Relationship between working capital management and profitability of listed companies in Athens Stock Exchange. *Journal of Financial Management and Analysis*, 19, 26-35.
[80]. Leonard, U. C., Chukwu, U. C., & Elom, J. O. (2018). Effect of working capital management on the profitability of brewery firms in Nigeria. *IOSR Journal of Economics and Finance (IOSR-JEF)*, 9(2), 9-20.
[81]. Levin, A., Lin, C. F., & Chu, C. S. J. (2002). Unit root tests in panel data: asymptotic and finite-sample properties. *Journal of Econometrics*, 108(1), 1-24.
[82]. Levy, H., & Sarnat, M. (2017). *Capital Investment and Financial Decisions*. Routledge.
[83]. Li, X., & Sun, S. T. (2014). Managerial ownership and firm performance: Evidence from the 2003 tax cut. *Journal of Social and Management Sciences*, 4(2), 1–57.
[84]. Madobi M. S., Abubakar A., Mafindi A. M. (2020). Corporate Diversification and Earnings Management in Listed Manufacturing Firms in Nigeria: The Moderating Role of Managerial Shareholding. *FUDMA Journal of Management Sciences*, 1(1), 238-263.
[85]. Mat Nor, F., & Sulong, Z. (2007). The interaction effect of ownership structure and board governance on dividends: evidence from Malaysian listed firms. *Capital Market Review*, 15(2), 73-101.
[86]. Mathuva, D. M. (2009). Capital adequacy, cost income ratio and the performance of commercial banks: The Kenyan Scenario. *The International Journal of Applied Economics and Finance*, 3(2), 35-47.
[87]. Memon, M. A., Cheah, J. H., Ramayah, T., Ting, H., Chuah, F., & Cham, T. H. (2019). Moderation analysis: issues and guidelines. *Journal of Applied Structural Equation Modeling*, *3*(1), 1-11.
[88]. Miller, J. R., & Craig, C. R. (2001). The theory and practice of corporate finance: Evidence from the field. *Journal of Financial Economics*, 60(2-3), 187-243.
[89]. Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American Economic Review*, 48(3), 261-297.
[90]. Mohapatra, S. (2017). Management of financial risks. *Journal of Management Research and Analysis*, 4(2), 70-77.
[91]. McClelland, G. H., Irwin, J. R., Disatnik, D., & Sivan, L. (2017). Multicollinearity is a red herring in the search for moderator variables: A guide to interpreting moderated multiple regression models and a critique of Iacobucci, Schneider, Popovich, and Bakamitsos (2016). *Behavior research methods*, *49*, 394-402.
[92]. Moles, P., Parrino, R., & Kidwell, D. S. (2011). *Corporate Finance*. John Wiley & Sons.
[93]. Mosebach, M. (2013). *Finance & Development: Issues and Challenges*. Springer.
[94]. Mukherji, A., Desai, A. B., & Wright, P. (2008). A contingent relationship between risk and return: Towards a behavioural model of decision making. *Institute of Behavioural and Applied Management*.
[95]. Muller, M., & Baker, K. R. (2018). *Purchasing and Supply Chain Management*. Cengage Learning.
[96]. Munene, F., & Tibbs, C. Y. (2018). Accounts receivables management and financial performance of Emibu water and sanitation company limited. *International Academic Journal of Economics and Finance*, 3(2), 216-240.
[97]. Muthoni, J. G., Kiprotich, I. N., & Kipyego, L. (2020). Management of Accounts Receivable and Financial Performance Of Manufacturing Firms Listed In Nairobi Stock Exchange, Kenya. *International Journal of Scientific and Research Publications*, 10(12), 513-523.
[98]. Myers, S. C. (1984). The Capital Structure Puzzle. *Journal of Finance*, 39(3), 575-592.
[99]. Namagembe, S., & Munene, J. C. (2016). Information sharing inventory management and customer satisfaction: The case of manufacturing firms in Kampala. *International Journal of Economics and Management Sciences*, 1(6), 35-44.
[100]. Napompech, K. (2012). Effects of working capital management on the profitability of Thai listed firms. *International Journal of Trade, Economics and Finance*, 3(3), 227-232.
[101]. Nigerian Stock Exchange (NSE) (2019). Consumer Goods Sector: A review of FY-18 Performance. *Daily Market Commentary Wednesday 3 April 2019*.
[102]. Niresh, J. A. (2014). Trade-off between liquidity & profitability: A study of selected manufacturing firms in Sri Lanka. *Journal of Arts, Science & Commerce*, 4(2), 34-40.
[103]. Nobanee, H., Abdullatif, M., & AlHajjar, M. (2011). Cash conversion cycle and firm's performance of Japanese firms. *Asian Review of Accounting*, 19(20), 147–156.

[104]. Nwidobie, N. B. (2012). Working capital management efficiency and corporate profitability: Evidence from quoted firms in Nigeria. *Journal of Applied Finance and Banking*, (2), 215-237.

[105]. Nwude, E. C., & Agbo, E. I. (2018). Impact of account receivables period on the profitability of quoted insurance companies in Nigeria. *Transylvanian Review*, 26(25), 6649-6658.

[106]. Obembe, O. B., Olaniyi, C. O., & Soetan, R. O. (2016). Managerial ownership and performance of listed non-financial firms in Nigeria. *International Journal of Business and Emerging Markets*, 8(4), 446–461.

[107]. Obure, J. B. (2016). Corporate Social Responsibility and Organizational Growth: A Case of Equity Bank (Unpublished Master's Thesis). University of Nairobi, Nairobi.

[108]. Odo, S. I., & Udodi, J. N. (2022). Influence of cash management on financial performance of selected manufacturing companies in Nigeria. *Contemporary Journal of Banking and Finance*, 3(6), 26-41.

[109]. Ogbonnaya, A. K., & Chimara, K. N. (2016). Capital structure composition and financial performance of firms in the brewery industry: Evidence from Nigeria. *Research Journal of Finance and Accounting*, 7(16), 7-15.

[110]. Oji, H. (2023, March 21). Lingering economic challenges push 44 firms off NGX list in seven years. *The Guardian Nigeria News - Nigeria and World News*. https://guardian.ng/business-services/lingering-economic-challenges-push-44-firms-off-ngx-list-in-seven-years/

[111]. Okpe, I. I., & Duru, A. N. (2015). The Effect of Receivable Management on the Profitability of Building Materials/Chemical and Plant Manufacturing Firms in Nigeria. *Journal of Research in Humanities and Social Sciences*, 3(10), 01-06.

[112]. Oseifuah, E. K. (2016). Cash Conversion Cycle theory and corporate profitability. In *Cash Conversion Cycle theory and corporate profitability*.

[113]. Otieno, O. P. (2017). The effect of ownership structure on financial performance of firms on the Nairobi Securities Exchange (Master Thesis, University of Nairobi, Kenya). Retrieved from http://unk.nb.kn/resolve?unk=unk:nbk:kn-3765

[114]. Pandey, I. M. (2004). *Financial Management* (9th ed.). New Delhi, India: Vikas Publishing House PVT Ltd.

[115]. Panigrahi, R. R., Jena, D., Tandon, D., Meher, J. R., Mishra, P. C., & Sahoo, A. (2021). Inventory management and performance of manufacturing firms. *International Journal of Value Chain Management*, 12(2), 149-170.

[116]. Peter, I. A., Njoku, N. O., Ugoani, N. N. J., Nwaorgu, O. C., & Ukeje, S. O. (2020). Cash Management and Bank's Financial Performance: Evidence from selected Deposit Money Banks in Nigeria. *AFRE Accounting and Financial Review*, 3(2), 180-189.

[117]. Pouraghajan, A., Pourali, M. R., & Akbari, L. (2015). Relationship between ownership structure and corporate cash holdings in Iran. *Applied Mathematics in Engineering, Management and Technology*, 3(1), 771-778.

[118]. Raheeman, A., & Nasr, M. (2007). Working capital management and profitability-Case of Pakistani firms. *International Review of Business Research Papers*, 3, 279-300.

[119]. Raheman, A., & Nasr, M. (2007). Working capital management and profitability – case of Pakistani firms. *International Review of Business Research Papers*, 3(1), 279-300.

[120]. Raheman, A., & Nasr, M. (2007). Working Capital Management and Profitability - Case of Pakistani Firms. *International Review of Business Research Papers*, 3(1), 279–300.

[121]. Rahman Shaik, A. (2021). Components of working capital and profitability in Saudi Arabian companies. *Investment Management and Financial Innovations*, 18(3), 52–62. https://doi.org/10.21511/imfi.18(3).2021.05

[122]. Ramsey, J. B. (1969). Tests for specification errors in classical linear least-squares regression analysis. *Journal of the Royal Statistical Society. Series B (Methodological)*, 350-371.

[123]. Rehman, S. S. F. U. (2013). Relationship between financial leverage and financial performance: Empirical evidence of listed sugar companies of Pakistan. *Global Journal of Management and Business Research Finance*, 13(8), 33-40.

[124]. Reysa, R., Fitroh, U., Wibowo, C. R., & Rustanti, D. (2022). Determinasi Kebijakan Dividen dan Kinerja Perusahaan: Kepemilikan Manajerial dan Kinerja Keuangan (Literature Review Manajemen Keuangan). *Jurnal Manajemen Pendidikan Dan Ilmu Sosial*, 3(1), 364–374.

[125]. Richards, V. D., & Laughlin, E. J. (1980). A cash conversion cycle approach to liquidity analysis. *Financial Management*, 32-38.

[126]. Richards, A. B., Stewart, C. M., & Franklin, A. (2008). *Principles of Corporate Finance* (9th ed.). New York, Wiley and Sons.

[127]. Saputra, I. B. O. R., & Ratnadi, N. M. D. (2020). Kinerja Keuangan Sebelum dan Sesudah Penerapan Good Corporate Governance pada PT. Bank Pembangunan Daerah Bali. *E-Jurnal Akuntansi*, 30(7), 1750–1766.

[128]. Schreibfeder, J. (2018). *Essentials of Inventory Management*. The Effective Inventory Management, Inc.

[129]. Salgado, J. M., Gómez-Mejía, L. R., & Hitt, M. A. (2018). Working capital management and firm performance: A meta-analysis. Journal of Management, 44(6), 1998-2030.

[130]. Saunders, D. R. (1955). The moderator variable as a useful tool in prediction. In Proceedings of the 1954 invitational conference on testing problems (pp. 54–58). Princeton, NJ: Educational Testing Service.

[131]. Saunders, D. R. (1956). Moderator variables in prediction. *Educational and Psychological Measurement*, 16, 209–222.

[132]. Schroeder, P., & Kacem, I. (2019). Optimal cash management with uncertain, interrelated and bounded demands. *Computers & Industrial Engineering*, 133, 195–206. https://doi.org/10.1016/j.cie.2019.04.052

[133]. Shams, R., Iqbal, K., & Nadeem, A. (2019). Effect of working capital management on firm performance: The role of ownership structure. *Global Social Sciences Review*, 4(1), 108-119.

[134]. Shieh, G. (2011). Clarifying the role of mean centring in multicollinearity of interaction effects. *British Journal of Mathematical and Statistical Psychology*, *64*(3), 462-477.

[135]. Sharma, N., & Kumar, A. (2018). Impact of working capital management on firm profitability: A study of Indian FMCG companies. *International Journal of Accounting and Financial Management Research*, 8(1), 36-47.

[136]. Shin H-H, Soenen L (1998) Efficiency of working capital management and corporate profitability. *Financial Practical Education*, 8(2), 37–45.

[137]. Shleifer, A., & Vishny, R. W. (1986). Large shareholders and corporate control. *Journal of Political Economy*, 94, 461-88.

[138]. Silver, E. A., Pyke, D. F., & Peterson, R. (2017). *Inventory Management and Production Planning and Scheduling*. CRC Press.

[139]. Smith, D., & Sell, G. (1980). Profitability versus liquidity tradeoffs in working capital management, in readings on the management of working capital. New York, St. Paul: West Publishing Company.

[140]. Soenen LA (1993) Cash conversion cycle and corporate profitability. *Journal of Cash Management*, 13(4), 53–58.

[141]. Srour, H., & Azmy, A. (2021). Inventory Management and Its Impact on the Firm Performance. *World Research of Business Administration Journal*, 1(1), 45-65.

[142]. Suaidah, Y. M., & Utomo, L. P. (2018). Pengaruh Mekanisme Good Corporate Governance dan Profitabilitas terhadap Manajemen Laba. *Jurnal Ekonomi Dan Bisnis*, 20(2), 120–130.

[143]. Takim, S. A. (2014). Optimization of effective inventory control and management in manufacturing industries: Case study of flour mills company, Calabar, Nigeria. *Journal of Emerging Trends in Engineering and Applied Sciences*, 5(4), 265-276.

[144]. Tally, H. A. (2014). An Investigation of the Effects of Financial Leverage on Firm Performance in Saudi Arabia's Public Listed Companies (Doctoral thesis, Victoria University, Melbourne, Australia). Retrieved from Vuir.vu.au/24843/1/Hassan%20Ahmed%20Al.Tally.

[145]. Tello, A., Alquier, T., & Machain, C. (2018). The effect of firm size on working capital management practices: Evidence from Mexican firms. *Journal of Applied Accounting Research*, 13(1), 134-151. https://doi.org/10.1108/JAAR-12-2015-0478

[146]. Tiegen, H. K., & Brun, W. (1997). Anticipating the future: Appraising risk and uncertainty. Routledge.

[147]. Tryfonidis D, (2006). Relationship between working capital management and profitability of listed companies in the Athens stock exchange. *Journal of Financial Management and Analysis*, 19, 26-25.

[148]. Ugurlu, M. (2000). Agency costs and corporate control devices in the Turkish manufacturing industry. *Journal of Economics Studies*, 27(6), 566-99.

[149]. Ugwudioha, O., & Onmonya, L. (2022). Determinants of Accounts receivable of Listed Consumer Goods Companies in Nigeria. *Universal Journal of Accounting and Finance*, 10(4), 793-802. DOI: 10.13189/ujaf.2022.100401.

[150]. Umenzekwe, P. C., Okoye, E. I., & Aggreh, M. (2021). Working Capital Management And Financial Performance: Evidence From Selected Nigerian Manufacturing Firms. *Journal of Contemporary Issues in Accounting*, 2(1), 141–156. Retrieved from https://journals.unizik.edu.ng/index.php/jocia/article/view/940

[151]. Uyar, A., & Kuzey, C. (2015). Working capital management and corporate performance: Evidence from Turkey. *Procedia-Social and Behavioral Sciences*, 195, 1307-1316.

[152]. Van Helden, G. J., & Wijn, M. F. (2018). *Finance: The Basics*. Routledge.
[153]. Van Horne, J., & Wachowicz, J. (2006). *Fundamentals of Financial Management*. Pearson Education, Prentic Hall, Twelfth Edition.
[154]. Weinraub, H. J., & Visscher, S. (1998). Industry Practice Relating To Aggressive Conservative Working Capital Policies. *Journal of Financial and Strategic Decision*, 11(2), 11-18.
[155]. Westerfield, R., Jordan, B., & Roberts, G. (2019). *Principles of Corporate Finance.* McGraw-Hill.
[156]. Wooldridge, J. M. (2010). *Econometric Analysis of Cross Section and Panel Data*. MIT Press.
[157]. Yankah, R., Osei, F., Owusu-Mensah, S., & Agyapong, P. J. (2022). Inventory Management and the Performance of Listed Manufacturing Firms in Ghana. *Open Journal of Business and Management*, 10(5), 2650-2667.
[158]. Yegon, C., K. Muturi, W., & Oluoch, O. (2022). Moderating Effect of Ownership Structure on the Relationship between Working Capital Management Decisions and Financial Performance of Tea Firms in Kenya. *Journal of Finance and Accounting*, 9(1), 48-55. https://doi.org/10.12691/jfa-9-1-5
[159]. Yousaf, M., & Bris, P. (2021). Effects of Working Capital Management on firm performance: Evidence from the EFQM certified firms. *Cogent Economics & Finance*, 9(1). https://doi.org/10.1080/23322039.2021.1958504.
[160]. Yunus, R. N., & Tarigan, W. (2020). Pengaruh Good Corporate Governance dan Ukuran Perusahaan Terhadap Kinerja Keuangan Property dan Real Estate yang Terdaftar Di BEI. *Jurnal Akuntansi Bisnis & Publik*, 11(1), 1–10.
[161]. Yunusa, A. (2021). Inventory Management Practices and Performance of Manufacturing Firms in Kogi State. *Journal of Good Governance and Sustainable Development in Africa*, 6(3), 54-63.
[162]. Zunairoh, & Fatkhurrohman. (2019). Liquidity, leverage, and cash holding: Evidence from Indonesia listed real estate firms. *Journal of Administrative and Business Studies*, 5(2), 79-87.

***Corresponding author: Dr Haruna Dzugwahi***
***Revenue mobilisation Allocation and Fiscal Commission +2348028411327***