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# Effect of Working Capital Management on the Profitability of Listed Consumer Goods Firms in Nigeria

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***Abstract*— Despite extensive research in corporate finance, the relationship between working capital management (WCM) and firm performance remains inconclusive, with empirical findings differing across industries, countries, and methodological approaches. While prior studies identify inventory turnover, receivables, payables, and the cash conversion cycle as key components of WCM, their effects on firm outcomes vary widely, especially within developing economies where liquidity constraints and market volatility are more pronounced. Moreover, existing studies on WCM in Nigeria have predominantly focused on conglomerates, manufacturing, and financial firms, with limited attention to the consumer goods sector a sector characterized by high working capital intensity and rapid inventory cycles. These inconsistencies and contextual gaps justify further empirical investigation. This study therefore examined the effect of working capital management on the profitability of listed consumer goods firms in Nigeria. A longitudinal panel research design was adopted. The target population consisted of 21 consumer goods firms listed on the Nigerian Exchange Group (NGX) as at 31st December 2023. Using purposive sampling based on availability of complete data, 13 firms with consistent annual reports covering 2013–2023 were selected. Secondary data were extracted from audited annual reports and analyzed using descriptive statistics, correlation analysis, and panel regression techniques. Findings revealed that inventory turnover, cash conversion cycle, and payables management have positive and significant effects on return on equity (ROE), while receivables management exerts a negative and significant effect on profitability. The study concludes that efficient management of working capital components is essential for improving profitability among Nigerian consumer goods firms. It recommends that managers strengthen receivables collection strategies, optimize inventory levels, and reduce the cash conversion cycle in order to sustain profitability and enhance competitiveness within the sector.***

***Keywords*—Working Capital Management, Profitability, Listed Consumer Goods Firms, Nigeria.***

## I. INTRODUCTION

Profitability remains a fundamental measure of a firm's financial performance and long-term sustainability in both developed and developing economies. Across the globe, firms continuously seek to optimize operational efficiency to enhance profitability in the face of competitive pressures and economic uncertainty. Among the strategies that firms employ, effective Working Capital Management (WCM) has emerged as a key contributor to profitability (Dada et al., 2021; Mache & Omodero, 2021;). Globally, firms that manage their working capital efficiently are better positioned to maintain liquidity and maximize returns (Oke & Adebola, 2022). In developed economies, robust infrastructure and access to credit enhance WCM practices. For instance, in countries like the United States, Germany, and Japan, firms are leveraging real-time inventory systems, electronic receivables tracking, and supplier financing arrangements to optimize their cash conversion cycles (Dada et al., 2021). These practices are often supported by advanced technological systems, robust financial markets, and favorable institutional frameworks. Across sectors, particularly in Fast-Moving Consumer Goods (FMCG), optimizing working capital ensures consistent product availability, customer satisfaction, and cost efficiency (Asuzu et al., 2023; Oke & Adebola, 2022). Thus, the global discourse underscores that effective WCM not only preserves liquidity but also creates value through improved operational responsiveness and strategic agility. In the context of emerging economies like Nigeria, the implications of working capital management are more pronounced due to structural and macroeconomic challenges. Persistent inflation, foreign exchange volatility, infrastructural deficits, and limited access to affordable credit heighten the importance of internal financing (Ijuwo, 2024; Balogun, 2022). Nigerian firms often face erratic

revenue inflows and must navigate supply chain disruptions, power outages, and high distribution costs all of which put pressure on liquidity. These constraints make efficient WCM not just desirable, but necessary for survival and growth (Ogunlade, 2021).

Moreover, consumer goods sector a critical part of Nigeria's non-oil economy is particularly sensitive to working capital fluctuations due to its dependence on efficient inventory management, timely supplier payments, and swift cash flows from sales (Ogunlade, 2021). The Nigerian consumer goods sector, comprising firms engaged in the production and distribution of food, beverages, household products, and personal care items, is particularly sensitive to these dynamics. Characterized by high consumer turnover, dependence on imported raw materials, and intense price competition, the sector requires agile inventory systems, disciplined credit management, and strategic supplier coordination (Dada et al., 2021; Mache & Omodero, 2021.). Listed consumer goods firms such as Nestlé Nigeria, Unilever Nigeria, and Nigerian Breweries are under constant pressure to balance short-term liquidity with long-term value creation. The performance of this sector is closely watched by investors and policymakers alike, as it contributes significantly to employment, household consumption, and the non-oil Gross Domestic Product of the country (Asuzu et al., 2023). Therefore, understanding how WCM practices impact profitability within this sector holds both academic and practical relevance. Working capital components such as the cash conversion cycle, accounts receivable, accounts payable, and inventory turnover determine how efficiently a firm converts its resources into cash and profits. In addition, effective handling of the Cash Conversion Cycle (CCC) plays a strategic role in sustaining firm profitability. In the consumer goods sector, where products often have short shelf lives and high turnover rates, managing the time between expenditure on production inputs and recovery through sales is crucial. Nigerian firms that compress their CCC are better positioned to reinvest cash quickly, improve liquidity, and meet operating demands without resorting to costly external financing. With fluctuating macroeconomic conditions and rising input costs, firms that minimize delays in this cycle can achieve more stable and predictable cash flows, which ultimately enhances profitability (Onuh, 2023; Ijuwo, 2024). Effective Management of Accounts Receivable (AR) is another strategy that directly impacts cash flow efficiency and customer relationships. In Nigeria's consumer goods market where firms often deal with a mix of retail chains, wholesalers, and informal markets credit sales are common. Efficient AR practices allow firms to maintain sales volumes while ensuring timely collections. Firms that monitor receivables actively and implement disciplined credit policies can reduce the risk of bad debts and improve their working capital positions. In a competitive sector where cash flow is king, swift recovery of receivables contributes significantly to financial performance (Mache & Omodero, 2021; Oke & Adebola, 2022).

Similarly, Accounts payable (AP) serve as a key component in balancing liquidity and supplier relations. Consumer goods firms that negotiate favorable payment terms can retain cash longer for other operational uses. In the Nigerian context, where access to credit is often constrained, the ability to optimize AP is a form of informal financing. However, maintaining good relationships with suppliers is also critical, especially when firms depend on imported raw materials or operate within complex distribution networks. Firms that manage payables responsibly can leverage vendor trust while maintaining cash flow flexibility (Dada et al., 2021; Ijuwo, 2024). Proper control over Inventory Turnover Days (ITD) is essential in the consumer goods sector, which involves fast-moving items and high consumer demand variability. Nigerian firms that align their inventory cycles with actual market demand are more likely to avoid excess holding costs, stockouts, and product expiration. Especially in segments like beverages, food, and personal care, inventory agility ensures better shelf availability and customer satisfaction. Efficient inventory practices also support smoother production schedules and reduced operational bottlenecks, which contribute positively to overall firm profitability (Asuzu et al., 2023; Balogun, 2022). Despite the growing body of literature, methodological variations persist in the empirical assessment of WCM's effect on profitability. Differences in variable definitions, model specifications, and control variables have led to mixed findings (Mache & Omodero, 2021). Furthermore, many studies adopt cross-sectional approaches, limiting the ability to capture time-based dynamics (Oke & Adebola, 2022). This study directly addresses the methodological inconsistencies in the working capital management (WCM) literature by

employing a longitudinal research design and robust econometric techniques for panel data to assess the effect of WCM on the profitability of listed consumer goods firms in Nigeria. Acknowledging that mixed findings stem from divergent variable definitions, model specifications, and the limitations of cross-sectional approaches, this research will utilize a standardized set of financial ratios to measure WCM efficiency and profitability, ensuring comparability and reducing measurement error. By tracking a panel of firms over a defined period, the study can capture dynamic, time-based effects and firm-specific unobserved heterogeneity that cross-sectional studies miss. The application of suitable panel data estimators, such as fixed or random effects models, will control for this heterogeneity and enhance the robustness of the causal inferences. Focusing exclusively on the Nigerian consumer goods sector allows for the control of industry specific factors, thereby generating precise, contextually relevant insights into the WCM and profitability effect and contributing to the resolution of existing empirical contradictions. This study therefore seeks to assess the effect of working capital management on the profitability of listed consumer goods firms in Nigeria.

## II. STATEMENT OF THE PROBLEM

In recent years, effective working capital management (WCM) has gained recognition as a crucial determinant of firm profitability, particularly in sectors with high inventory turnover and rapid cash flow cycles, such as the consumer goods industry. Global studies have consistently demonstrated that well-managed working capital can result in improved profitability, liquidity, and operational efficiency (Onuh, 2023; Mache & Omodero, 2021). However, despite the growing body of literature, a practical gap exists in the application of WCM practices to the Nigerian context, particularly among listed consumer goods firms. While substantial research on working capital management (WCM) exists in developed economies, there is insufficient comprehensive study on how WCM components such as cash conversion cycle (CCC), accounts receivable (AR), accounts payable (AP), and inventory turnover days (ITD) specifically impact profitability in Nigeria's consumer goods sector. Existing Nigerian studies reveal mixed findings: some show statistically insignificant effects of AR, AP, and inventory turnover on profitability measures like Return on Assets (ROA), indicating that fluctuations in these components may not robustly determine profitability. Others highlight the importance of managing debtor collection periods and stock conversion efficiently to enhance operational performance, though their direct connection to profitability remains complex and context-dependent. These varied results underscore a research gap in fully understanding WCM's effect on profitability in Nigeria's consumer goods industry, suggesting a need for more focused, contextualized empirical investigations to guide tailored WCM strategies (Ogbuigwe et al., 2025; Efeeloo et al., 2025; Ibrahim et al., 2025)

Moreover, while working capital components have been studied individually (Oke & Adebola, 2022), there is an empirical gap in understanding their collective effect on profitability in the Nigerian consumer goods sector. This gap is particularly notable in light of the fact that Nigerian firms, such as Nestlé Nigeria, Unilever Nigeria, and Nigerian Breweries, have been documented in annual reports and prior studies (oyeneye et al.,2023; CBN, 2022.) to face persistent challenges in maintaining a balance between short-term financial stability and long-term growth amidst the country's fluctuating economic conditions. The lack of integrated research on the combined influence of CCC, AR, AP, and ITD on firm profitability in Nigeria's consumer goods sector limits the ability of managers to make informed decisions regarding working capital (Ogunlade, 2021).

Furthermore, Existing studies on working capital management have primarily relied on cross-sectional data, which often overlook the dynamic adjustments firms make over time in response to changing economic conditions. For instance, Mache and Moden (2021) and Lyngstadaas and Berg (2016) observed that such static models fail to capture firm-specific and temporal variations in working capital behavior. Similarly, Afrifa and Padachi (2016), Enqvist et al., (2014), and Pais and Gama (2015) argued for a longitudinal panel approach to better understand how working capital management evolves and influences profitability across different periods. This methodological gap justifies the use of a longitudinal panel design in the present study.

The practical gap arises from the fact that Nigerian consumer goods firms face unique challenges that are not fully addressed by existing models. These include

macroeconomic instability, inflation, volatile exchange rates, erratic power supply, and access to credit constraints (Balogun, 2022; Ijuwo, 2024). These factors place additional pressure on working capital management, making it more difficult for Nigerian firms to implement globally recognized best practices. Despite the importance of these factors, little empirical research has explored how these macroeconomic conditions impact the efficiency of working capital and its subsequent effect on profitability in Nigerian firms (Echobu, 2023; Dada et al., 2021).

Firm-level evidence underscores this problem. For example, Unilever Nigeria Plc's cash conversion cycle (CCC) increased from 43 days in 2021 to 58 days in 2022, while profit after tax declined from ₦6.3 billion to ₦5.5 billion despite a 13% rise in revenue (Unilever Nigeria Plc, 2022 Annual Report). Nestlé Nigeria Plc recorded a fall in inventory turnover from 3.8 to 3.1 and an increase in receivable days from 42 to 56, coinciding with a profit decline from ₦40 billion to ₦38.3 billion (Nestlé Nigeria Plc, 2022 Annual Report). Similarly, Cadbury Nigeria Plc's 78-day average receivable period in 2021 restricted cash flow and elevated borrowing costs (Cadbury Nigeria Plc, 2021 Annual Report), while Flour Mills of Nigeria Plc's payables averaged only 42 days was below the 60 to 90-day benchmark typical of global best practice (BMA Journal, 2024). Consequently, firms like Unilever saw profit before tax fall sharply, from ₦9.4 billion in 2021 to ₦3.9 billion in 2023 (Unilever Nigeria Plc, 2023 Annual Report). These patterns reveal a critical practical issue: despite stable revenues, the inefficient management of working capital manifested in prolonged CCCs, sluggish inventory turnover, delayed receivables, and premature supplier payments continues to erode profitability among Nigerian consumer goods firms.

The practical gap also extends to policy-level decisions. While Nigerian policymakers recognize the importance of the consumer goods sector in the country's economic development, there is limited research on how strategic WCM can enhance the profitability and sustainability of firms within this critical sector. Addressing this gap is crucial for both managers and policymakers to develop target strategies for improving liquidity, enhancing competitiveness, and ensuring profitability in a challenging economic environment (Dada et al., 2021; Asuzu et al., 2023).

Consequently, this study aims to fill the existing gap by investigating how effective working capital management affects the profitability of listed consumer goods firms in Nigeria. By examining the collective effect of working capital components such as cash conversion cycle, accounts receivable, accounts payable, and inventory turnover days this research will provide insights that can help firms better manage their working capital, improve profitability, and navigate the volatile economic conditions that characterize the Nigerian business environment. This research seeks to address these gaps by employing a longitudinal approach over 10 years, examining a comprehensive set of working capital variables, and incorporating relevant control variables. By doing so, it aims to provide a more detailed analysis of how working capital affect profitability in Nigerian consumer goods firms listed on the Nigerian Group Exchange.

Research Questions

This research was guided by specific research questions based on the problem statement as highlighted:

i. What is the effect of the cash conversion cycle on the return on equity of listed consumer goods firms in Nigeria?
ii. What extent does accounts receivable days influence the return on equity of listed consumer goods firms in Nigeria?
iii. What is the effect of account payable days on the return on equity of listed consumer goods firms in Nigeria?
iv. How does the inventory turnover days affect the return on equity of listed consumer goods firms in Nigeria?

Aim and Objectives of the Study

The main objective of the study was to examine the effect of working capital management (WCM) on profitability of Nigeria listed consumer goods firms; the research pursues the following specific objectives to:

i. determine the effect of cash conversion cycle on return on equity of listed consumer goods firms Nigeria.
ii. investigate the influence of accounts receivable days on the return on equity of listed consumer goods firms in Nigeria.

iii. evaluate the effect of account payable days on the return on equity of listed consumer goods firms in Nigeria.
iv. assess the effect of inventory turnover days on the return on equity of listed consumer goods firms in Nigeria.

## III. LITERATURE REVIEW

Concept of profitability

Profitability is a fundamental financial concept that reflects a firm's ability to generate income relative to its expenses and associated costs during a given period. It serves as a key indicator of a firm's financial health, operational efficiency, and ability to create value for stakeholders (Brigham & Houston, 2020). According to Angelia and Toni (2020), profitability is "the ratio used to measure the company's ability to generate profits with the resources it has," underscoring the importance of internal efficiency in generating earnings. Similarly, define it as "a firm's ability to generate profits from their activities," positioning profitability as a direct result of effective operational management. In the same vein, Sulaiman & Ibrahim (2020) explain profitability as the capacity to earn profits in relation to assets, equity, or sales, emphasizing the use of financial ratios such as return on assets (ROA), return on equity (ROE), and net profit margin in evaluating firm performance. Brigham and Houston (2020) further point out that profitability reflects how well a company's management utilizes its resources to generate earnings, making it a core performance metric. For consumer goods firms in Nigeria, profitability is heavily influenced by factors such as working capital management, inflation, currency fluctuation, and access to credit. Efficient working capital management balancing inventory, receivables, and payables can significantly improve profitability by minimizing costs and enhancing liquidity (Deloof, 2003). Therefore, this study considers profitability not only as a measure of financial performance but also as an outcome of strategic short-term resource allocation in the context of listed consumer goods firms in Nigeria.

*Factors Affecting Profitability*

Profitability is a key measure of a firm's financial performance and long-term sustainability. It indicates how effectively a company utilizes its resources to generate income. Several internal and external factors influence a firm's profitability, particularly in the consumer goods sector where market competition, cost structures, and operational efficiency play critical roles. *Cost management*: One of the most direct influences on profitability is the firm's ability to manage its cost structure. Owolabi and Osho (2019) assert that firms that effectively control production and operational costs tend to have higher profit margins. Adegbite and Yusuf (2022) found that in Nigeria's consumer goods industry, high overhead and raw material costs due to inflation significantly impact net profit margins. *Sales volume and pricing strategy*: Profitability is also driven by the volume of goods sold and the pricing strategy employed. According to Okonkwo and Eze (2020), firms that achieve economies of scale through high sales volumes can spread their fixed costs over more units, thus increasing profit margins. Emphasize that pricing strategy plays a dual role in both driving demand and influencing margins. *Working capital management*: Efficient working capital management, particularly inventory turnover, accounts receivable, and accounts payable, significantly impacts profitability. Ibrahim and Salisu (2019) demonstrated a strong link between short operating cycles and increased return on assets (ROA) among Nigerian firms. Chukwuma and Musa (2023) confirm that effective working capital components reduce financing costs and enhance firm profitability. *Firm size and capital structure*: Larger firms may enjoy economies of scale, stronger bargaining power, and better access to financing, all of which can enhance profitability. Bello and Ismaila (2020) found that firm size positively correlates with profitability in Nigeria's manufacturing sector. Similarly, Agbaje and Nwankwo (2024) argue that a balanced capital structure where debt is used strategically can improve returns by reducing the cost of capital. *Market conditions and competition*: External factors such as market demand, competition, and economic climate also affect profitability. Eze and Odu (2022) explain that macroeconomic instability, foreign exchange fluctuations, and consumer income levels significantly influence profit outcomes in Nigeria's consumer goods sector. High competition forces firms to lower prices, which may reduce profitability if not matched by higher sales volume. *Technology and innovation*: Adoption of new technologies enhances efficiency and can create competitive advantages. Oladimeji and Balogun (2025) found that firms that invest in automation, digital marketing, and logistics technologies often achieve higher

profitability due to improved customer reach and lower operating costs.

Concept of working capital management

Working Capital Management (WCM) refers to the strategies and practices employed by firms to manage their short-term assets and liabilities to ensure operational efficiency and financial stability. It plays a critical role in maintaining a firm's liquidity, operational efficiency, and overall profitability. According to Akoto et al. (2019), working capital management encompasses decisions relating to cash, inventory, receivables, and payables that collectively ensure the smooth running of day-to-day business activities. Obaidullah (2020) defines WCM as the administration of current assets and current liabilities in a manner that prevents liquidity problems while maximizing profitability. Eneh and Onyema (2021) describe WCM as the firm's ability to maintain an optimal balance between its working capital components to avoid insolvency and maximize returns. Similarly, Iheanacho and Ogbonna (2022) assert that effective WCM ensures that a firm can meet its short-term obligations without unnecessary financing costs.

*Factors Affecting Working Capital Management*

Working capital management (WCM) involves managing short-term assets and liabilities to ensure a firm's operational efficiency and liquidity. The effectiveness of WCM is influenced by multiple interrelated factors that vary across firms, industries, and economic environments. *Nature of Business and Operating Cycle*: The type of industry and the length of the operating cycle have a major impact on working capital requirements. According to Adeniyi and Onyekachi (2019), firms involved in manufacturing or consumer goods production typically require more working capital due to longer production and sales cycles compared to service-based firms. Chukwu and Ibrahim (2021) add that a longer operating cycle demands higher investment in inventories and receivables, increasing the need for careful WCM. *Firm Size and Growth*: Larger firms often have better access to credit and economies of scale, allowing them to manage working capital more efficiently. Eze and Oladapo (2020) found that firm size positively influences WCM efficiency, as large firms have more bargaining power with suppliers and customers. Also reported that growing firms require more working capital to support expansion, which can strain liquidity if not well managed. *Credit Policy and Terms of Trade*: Credit granted to customers (accounts receivable) and received from suppliers (accounts payable) influence working capital dynamics. Iroegbu and Adigwe (2022) emphasize that liberal credit policies increase sales but also tie up cash in receivables. Conversely, strict credit terms may improve cash flow but reduce market competitiveness. *Inventory Management*: Efficient inventory turnover is crucial in working capital optimization. Afolabi and Umar (2019) assert that excessive inventory increases holding costs and risks obsolescence, while inadequate inventory may lead to stockouts and lost sales. Therefore, inventory policies directly impact liquidity and profitability. *Macroeconomic Factors*: Inflation, interest rates, and exchange rate fluctuations affect both the cost and availability of working capital. According to Okonkwo and Ogundele (2024), high inflation increases input costs and reduces the purchasing power of firms, leading to higher working capital needs. Similarly, exchange rate volatility impacts import-dependent firms, especially in the consumer goods sector. *Cash Flow and Profitability*: Firms with strong and stable cash flows can manage working capital more flexibly. Found that firms with high cash reserves are better positioned to fund their short-term obligations without relying heavily on external financing. Profitability also supports WCM by generating internal funds. *Management Efficiency and Technology*: The quality of management and the use of modern tools influence WCM performance. Ajayi and Ugochukwu (2022) highlight that firms using ERP systems or automated inventory and receivables tracking tools demonstrate superior WCM performance. Managerial skills and responsiveness also determine how quickly a firm can adapt its WCM strategy.

Cash conversion cycle

The Cash Conversion Cycle (CCC) is a vital metric in working capital management that measures the time it takes for a company to convert its investments in inventory and other resources into cash flows from sales. It captures the duration between cash outflows (payments to suppliers) and cash inflows (receipts from customers), thereby reflecting the efficiency of a firm's short-term financial operations. According to Deloof and Jegers (2019), the cash conversion cycle is the number of days it takes a firm to convert its inventory purchases into cash receipts from customers. Ibrahim and Musa (2020) define CCC as a key performance indicator that gauges the number

of days a firm's cash is tied up in operations before it is recovered through collections. Ogundipe et al. (2021) explain that CCC represents the interplay of inventory turnover, receivables collection, and payables deferral, and managing it well enhances liquidity and profitability. Olowookere and Daniel (2023) describe CCC as an operational metric that determines how quickly a firm can recover cash invested in working capital. In the words, CCC is the heart of working capital strategy, especially in the consumer goods sector, where inventory cycles are dynamic and sales are volume-driven. Several empirical studies have explored the relationship between CCC and firm profitability. Abubakar and Salisu (2019) found a significant negative relationship between CCC and return on equity among Nigerian listed manufacturing firms, indicating that shorter CCCs tend to enhance profitability. Chinedu and Ezeaku (2021) studied consumer goods firms on the Nigerian Exchange and concluded that minimizing CCC improves net profit margin due to better inventory and receivable management. Provided evidence that firms with shorter CCC outperform their peers in terms of return on assets (ROA) and earnings per share (EPS). In their sectoral analysis, emphasized that CCC is most impactful in the fast-moving consumer goods (FMCG) sector, where speed and liquidity are crucial to maintaining market competitiveness. Most recently, Found that firms with optimized CCC tend to reduce the need for external financing and enhance shareholder value. The cash conversion cycle (CCC) is a key financial indicator used to assess a company's operational efficiency and liquidity. For consumer goods companies, which typically face slim profit margins and fast inventory turnover, effectively managing the CCC can enhance profitability and support long-term sustainability in a highly competitive market.

Accounts receivable

Accounts receivable (AR) refers to the outstanding invoices or money owed to a company by its customers for goods or services delivered on credit. Effective accounts receivable management ensures timely collection of debts, maintains healthy cash flow, and reduces the risk of bad debts all of which contribute significantly to a firm's financial performance. Accounts receivable management involves the formulation and enforcement of credit policies that aim to enhance sales while ensuring the timely recovery of trade credits. Define it as the systematic process of monitoring and collecting outstanding payments from customers within agreed timeframes. Describe AR management as a balancing act between credit extension to increase sales and maintaining liquidity through quick collections. explain that poor AR management can lead to cash flow constraints, increased financing costs, and ultimately a decline in profitability. Similarly, highlight that in consumer goods firms where competition is high and margins are slim, efficient AR management is essential for sustaining operations and generating profits. Empirical studies have explored the impact of accounts receivable on firm profitability. Studied listed consumer goods firms in Nigeria and found that a shorter accounts receivable period was significantly associated with higher net profit margins. Observed that an increase in days sales outstanding (DSO) negatively affects return on assets (ROA), indicating that slow collections reduce liquidity and operational efficiency. Examined 12 listed firms and concluded that aggressive credit policies may increase sales volume but reduce profitability if not managed properly. Reported that firms with automated and data-driven receivables processes experienced improved cash flows and financial performance. Most recently, found that firms that effectively manage their receivables turnover ratio tend to maintain competitive advantage and profitability even during periods of economic uncertainty. In essence, the strategic management of accounts receivable plays a critical role in enhancing profitability by ensuring that firms strike a balance between credit sales and timely cash recovery. For firms in the Nigerian consumer goods sector, where competition and credit risk are prevalent, managing accounts receivable efficiently is a vital component of sustainable financial performance.

Accounts payable

Accounts payable (AP) refers to the amount a firm owes to its suppliers and creditors for goods or services purchased on credit. Effective accounts payable management involves making timely payments that strike a balance between maintaining supplier relationships and optimizing cash flow, which in turn affects firm profitability and liquidity. According to Adewuyi and Eze (2019), accounts payable management is the process of managing short-term obligations to suppliers in a way that ensures both liquidity and operational efficiency. Describe AP as a strategic component of working capital that can serve as an interest-free source of

financing if effectively managed. Define it as the firm's ability to negotiate favorable credit terms and ensure prompt settlement to avoid penalties and protect supplier trust. Chinelo and Musa (2022) note that delaying payments strategically can improve liquidity but excessive delays may strain supplier relationships. Similarly, explain that accounts payable management is a vital aspect of cash flow optimization, especially for firms in the consumer goods industry with recurring procurement needs. In summary, accounts payable management is more than a routine accounting function, it is a financial strategy that affects liquidity, credit reputation, and profitability. For consumer goods firms in Nigeria, where credit purchases are common and cash flow is tight, effective AP management is essential for operational success and long-term value creation.

Inventory turnover days

Inventory Turnover Days (ITD), also referred to as Days Inventory Outstanding (DIO), is a financial metric that indicates the average number of days a company takes to sell its entire inventory during a given period. It reflects how efficiently a firm manages its inventory and directly influences cash flow and profitability, especially in fast-moving sectors like consumer goods. Inventory turnover days measure the time taken to convert stock into sales and is critical for operational efficiency. Define it as the average number of days that inventory is held before being sold, emphasizing its role in cost and liquidity control. Explain that efficient inventory turnover minimizes holding costs, avoids stock obsolescence, and improves overall profitability. Chukwuma and Salisu (2023) describe inventory turnover days as a performance indicator that reflects how well a company aligns procurement with sales velocity. Emphasize that firms with lower ITD often experience better cash flow cycles, reduced storage expenses, and improved profitability metrics. Empirical studies consistently show that inventory turnover days have a significant impact on firm performance. Afolabi and Umar (2019) found a negative relationship between ITD and return on equity (ROE) among Nigerian manufacturing firms, suggesting that shorter inventory cycles enhance profitability. Egbetokun and Musa (2020) studied listed consumer goods firms and found that efficient inventory turnover was positively correlated with profit margin and return on assets (ROA). Reported that inventory days significantly influenced liquidity and net operating profits, particularly in firms with high sales volumes. Ikechukwu and Ibrahim (2023) noted that longer inventory holding periods are associated with increased storage and insurance costs, which reduce profit margins. Found that firms that adopted just-in-time (JIT) inventory systems and data-driven stock management experienced reduced ITD and increased net income. In the context of Nigeria's consumer goods sector, where companies often deal with perishable or fast-moving items, efficient inventory turnover is critical. Firms must maintain optimal inventory levels to meet demand without incurring excessive holding costs. Proper management of inventory turnover days supports stronger cash conversion cycles and enhances profitability.

Theoretical Review

A theoretical review is a thorough analysis of existing theories and frameworks related to a specific topic. It helps in understanding the underlying principles, assumptions, and relationships that explain a phenomenon. In this context, it examines various theories like the Pecking Order Theory and the Trade-Off Theory. The theoretical underpinnings of this study are rooted in the Trade-Off Theory, which advocates a balance between the costs and benefits of holding working capital, and the Pecking Order Theory, which emphasizes the preference for internal financing. These theories help explain managerial preferences in allocating resources toward working capital components (Ogunlade, 2021).

Pecking order theory

The pecking order theory, developed by Stewart Myers in 1984, is a theory of capital structure that suggests that companies have a preferred hierarchy, or "pecking order," for financing their investments. This theory can also be extended to explain companies' behaviour regarding working capital management. According to the pecking order theory, companies prioritize internal financing sources, such as retained earnings, to fund their investments. This preference arises because internal financing does not require any external financing activities or the associated costs, such as issuing securities or negotiating with external investors. Retained earnings are considered the most favorable source of funding as they do not entail any dilution of ownership or signaling concerns. When internal financing is insufficient to meet the funding needs, companies turn to debt financing as the second choice. Debt is often seen as a less costly and less

dilutive option compared to equity financing. The pecking order theory suggests that companies will prefer to issue debt rather than equity because issuing equity can signal negative information to the market and lead to a drop in stock prices. Regarding working capital management, the pecking order theory implies that companies will first use their internally generated funds, such as cash from operations, to meet their working capital requirements. Working capital refers to the funds needed to support a company's day-to-day operations, including activities such as inventory management, accounts receivable, and accounts payable. Companies tend to maintain a certain level of working capital to ensure smooth operations and mitigate liquidity risks. By utilizing internally generated funds to finance working capital needs, companies can avoid the costs and potential signaling issues associated with external financing. This study therefore adopts the pecking order theory to evaluate the relationship between WCM and firm performance.

The trade-off theory

The Trade-Off Theory of capital structure emerged as a refinement of the Modigliani and Miller (1958) theorem, which originally argued that in a perfect capital market without taxes, bankruptcy costs, or asymmetric information the value of a firm is unaffected by its capital structure. However, because such ideal conditions rarely exist in reality, subsequent researchers introduced the trade-off theory to incorporate real-world frictions. According to this theory, firms aim to balance the benefits and costs of debt and equity to determine an optimal capital structure (Kraus & Litzenberger, 1973). A primary benefit of debt is the interest tax shield, where interest payments are tax-deductible and reduce a firm’s taxable income, thus lowering the overall cost of capital. However, increasing debt levels expose firms to a higher risk of financial distress, which includes both direct costs, such as legal and administrative expenses during bankruptcy, and indirect costs, such as damaged reputation, operational disruptions, and reduced employee morale (Frank & Goyal, 2008). Moreover, high leverage can create agency problems, particularly conflicts between shareholders and debt holders, especially when managers are incentivized to pursue riskier projects that may not align with creditors' interests (Jensen & Meckling, 1976). The theory posits that firms seek an optimal debt level where the marginal benefit of the tax shield equals the marginal cost of financial distress. While the trade-off theory provides a structured explanation of capital structure choices, it has been criticized for not adequately explaining why some highly profitable firms use little or no debt, a phenomenon better explained by the pecking order theory. Nonetheless, the trade-off theory remains a key framework in corporate finance and is instrumental in understanding how firms manage financing decisions in light of taxes, risk, and financial stability.

Conceptual Framework of the Study

In Olaoye & Okunola (2020) model is a regression framework originally used to analyze the impact of working capital management specifically the average collection period, creditors' payment period, and inventory turnover days on the profitability (measured by Return on Assets) of manufacturing firms in emerging economies. In this thesis, the model is adapted by replacing ROA with Return on Equity (ROE) and refining the working capital variables to include the cash conversion cycle, accounts receivable days, accounts payable days, and inventory turnover days, while incorporating firm size and leverage as control variables. This adapted model provides a robust and sector-specific analytical tool to examine how efficiently managing short-term assets and liabilities influences the profitability of listed consumer goods firms in Nigeria. The ideas and abstract principles which have been reviewed and discussed above have been modelled with the aid of a conceptual framework shown Figure 2.2. The research framework in the image illustrates the effect of working capital management and profitability. It identifies independent variables Cash Conversion Cycle, Account Receivable (ARD), Inventories Turnover, and Account Payable that influence the dependent variable, Return on Equity (ROE). Additionally, control variables such as leverage and firm size are included to account for external influences.

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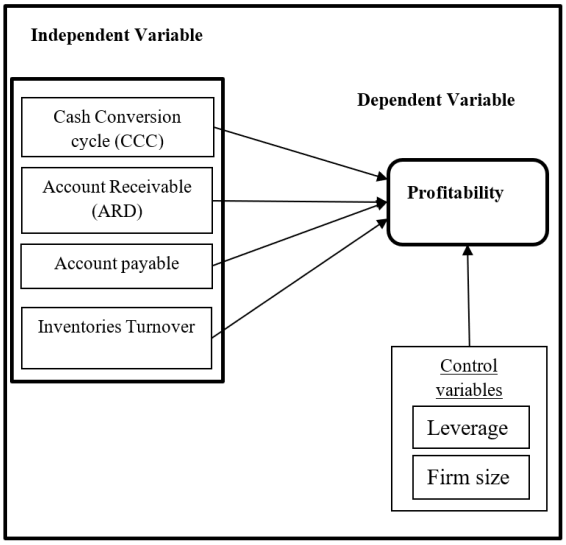


*Figure 1: adopted from Olaoye & okunade (2020)*

## IV. METHODOLOGY

Research Design

This study adopted a longitudinal panel research design to examine the effect of working capital management and profitability among listed consumer goods firms in Nigeria, as this approach is particularly suited for capturing dynamic effects and controlling for unobserved, time-invariant firm-specific characteristics. This approach is particularly suitable for investigating naturally occurring variables, such as financial metrics, where experimental manipulation is not feasible. This approach allows for the identification of patterns and associations between working capital components such as accounts receivable days, accounts payable days, inventory turnover days, and cash conversion cycle. Also, profitability indicator which is return on equity (ROE). By analyzing secondary data from financial statements over a specified period, this design facilitates the assessment of how variations in working capital practices correlate with changes in profitability. The choice of this approach aligned with the works of Srivastava et al. (2023) and Alsulayhim (2020) who have utilized this approach to investigate financial relationships in various contexts.

Population of the Study

This study focused on a population of twenty-one (21) consumer goods companies listed on the Nigerian Group Exchange (NGX), spanning a ten-year period from 2013 to 2023. The selection of this timeframe is justified by the economic conditions following the global financial crisis, that peaked in 2008 following the collapse of major financial institutions, which significantly impacted various sectors in Nigeria, including consumer goods. This period offers a meaningful context for evaluating how firms managed their working capital to sustain profitability during a decade marked by economic recovery, currency volatility, and evolving regulatory standards. The selection of consumer goods firms listed on the NSE is consistent with prior studies such as Oyeneye et al. (2023), Ighosewe and Odili (2022), and Abdullahi and Opeyemi (2020), who explored the relationship between working capital management and profitability in Nigerian consumer goods or manufacturing firms. These studies support the relevance of focusing on this sector due to its capital-intensive nature, high turnover rates, and significant influence on Nigeria's non-oil GDP. The list of consumer goods firms that formed the population of the study is shown in Table 1 below.

Sample Size and Sample Technique

This study selected 13 companies from the 21 consumer goods firms listed on the Nigerian Exchange Group (NGX) using a two-stage sampling process that combined a census approach with a purposive filtering method. Initially, all 21 firms were considered to ensure a broad and representative coverage of the consumer goods sector in Nigeria. This comprehensive inclusion at the initial stage aligns with the recommendations, who emphasized the importance of sectoral representation in financial performance studies. The filtering stage involved applying specific inclusion criteria aimed at refining the sample to firms that were both relevant and data-rich for the analysis of working capital management (WCM) and profitability. The selection criteria required that firms must: Have at least ten years of uninterrupted and complete financial statements from 2013 to 2023, providing a robust time series for examining trends in working capital and profitability indicator of return on equity. Provide key working capital components such as inventory turnover, receivables, payables, and cash conversion cycle, which are essential for accurate WCM measurement (Chukwuma & Musa, 2023). Be actively traded during the period under study, ensuring that market-based performance measures are reliable and not distorted by illiquidity or corporate inactivity. As a result of these stringent criteria, the final sample comprised 13 firms whose financial reports and disclosures were complete, relevant, and aligned with the study's objective. This selective approach ensures

data quality, increases the internal validity of the findings, and is consistent with empirical methods used in related WCM studies. This sample allows for a focused yet representative examination of the relationship between working capital management and profitability in Nigeria's consumer goods sector, where cash flow efficiency and asset turnover are critical to firm performance.

Sources and Method of Data Collection

This study used secondary data, which was extracted from the audited annual reports and financial statements of selected listed consumer goods firms in Nigeria. This approach is consistent with prior studies on working capital management and corporate profitability that relied on publicly available financial disclosures. The data collected span a ten-year period (2013–2023), allowing for a robust longitudinal analysis. Key variables sourced include the components of working capital management such as: Accounts receivable days, Inventory turnover days, Accounts payable days, Cash conversion cycle, Profitability indicators, specifically Return on Assets (ROA) and Net Profit Margin (NPM). The financial reports of the 13 selected firms provided the data needed to compute these metrics accurately. These documents were accessed through the official websites of the companies, the Nigerian Exchange Group (NGX), and other credible financial databases. Using secondary data from audited financial statements ensures objectivity and reliability, particularly in financial research where standardized reporting frameworks (e.g., IFRS) are followed. As supported by Adegbite and Yusuf (2022), such data sources offer comprehensive and verifiable insights into corporate financial behavior and are particularly effective for examining the impact of internal management practices like working capital control on profitability outcomes.

Method of Data Analysis

To examine the effect of working capital management on profitability of listed consumer goods firms in Nigeria, the study employed three key data analysis techniques: descriptive statistics, Pearson correlation, and multiple regression analysis. These statistical tools have been widely used in related empirical research.

Model Specification

This study adopts the model of Olaoye (2023), who examined the impact of working capital management on the profitability of manufacturing firms in emerging economies, specifying their model as

$$ROAit = \beta 1ACPit + \beta 2CPPit + \beta 3ITDit + \beta 4SIZEit + \beta 5SIZEit + \mu it --equation\ 1$$

Where:

- ROAit = Return on Asset of firm *i* in year *t*
- ACPit = average collection period (days)
- CPPit = creditors payment period (days)
- ITDit = Inventory Turnover Days
- SIZEit = Firm Size
- μit = Error term

This model is adopted because it aligns with the variables under investigation in the present study, particularly the inclusion of key working capital indicators (CCC, AR, AP, & ITD) that are central to measuring efficiency in working capital management. The model is theoretically grounded in pecking order theory and the trade-off theory which deal with efficient management of receivables, payables, and inventory enhances liquidity and profitability. Its empirical credibility is reinforced by recent applications in emerging market contexts (Sabo et al., 2021; Musa & Yakubu, 2022; Olayinka, 2024), which demonstrate that similar model structures yield consistent results across industries. Moreover, its relevance to the Nigerian consumer goods sector is notable, given the industry's exposure to raw material supply delays, currency volatility, and fluctuating consumer demand, making the focus on working capital metrics both timely and contextually appropriate.

Therefore, the model of the study is as follows;

$$ROEit = \beta 1CCCit + \beta 2ARit + \beta 3APit + \beta 4ITDit + \beta 5SIZEit + \beta 6LEVit + \mu it -- --equation\ 2$$

Where:

- ROEit = Return on Equity of firm *i* in year *t*
- CCCit = Cash Conversion Cycle
- ARit = Accounts Receivable Period (days)
- APit = Accounts Payable Period (days)
- ITDit = Inventory Turnover Days
- SIZEit = Firm Size
- LEVit = Leverage

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- μit = Error term

## V. DISCUSSION AND FINDINGS

### Descriptive Statistics

The descriptive statistics considered in this study were mean, standard deviation, maximum and minimum values. The analyses were performed for Working Capital Management (WCM) and profitability. It was carried out to analyze the pattern and the properties of the data collected. The results of the descriptive statistics are present in Table 1.

Table 1 Descriptive Statistics

| VARIABLE | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|
| ROE | 65.25634 | 37.3503 | 1 | 129 |
| ITO | 92.16176 | 70.65215 | 1.116951 | 424.50 |
| CCC | -4.720437 | 280.0262 | -1364.03 | 1975.72 |
| APD | 247.4968 | 480.6173 | 7.154282 | 4299.12 |
| ARD | 150.6154 | 570.8611 | 1.099878 | 6056.33 |
| FS | 17.486154 | 1.627247 | 14.22566 | 20.4967 |
| LEVERAGE | 3.495339 | 5.295903 | -9.16743 | 48.92299 |

*Source: STATA Output (2025).*

The descriptive statistics in the table 1 provide insights into the distribution and variability of the study variables. Return on Equity (RROE) has a mean value of 65.26 with a very high standard deviation of 37.35, which indicates substantial variability and the presence of extreme performance differences across firms. Inventory Turnover (ITO) records an average of 92.16 with a standard deviation of 70.65, suggesting considerable dispersion around the mean, with some firms having 1.12 inventory turnover and others reaching as high as 424.50. The Cash Conversion Cycle (CCC) shows a negative mean of -4.72 and a very high variability (Std. Dev. = 280.03), ranging from -1364.03 to 1975.72, implying that while some firms manage very short or even negative cycles, others experience excessively long cash conversion periods. Accounts Payable Days (APD) and Accounts Receivable Days (ARD) also exhibit large variations, with APD averaging 247.50 days (Std. Dev. = 480.62, range 7.15–4299.12) and ARD averaging 150.62 days (Std. Dev. = 570.85, range 1.09 – 6056.33), highlighting significant differences in firms' credit and payment policies. Firm Size (FS), measured with a mean of 17.49 and a relatively low standard deviation of 1.62, appears to be more stable across firms, ranging between 14.23 and 20.50. Moreover, Leverage has a mean of 3.50 with a standard deviation of 5.30, and ranges from -9.17 to 48.92, indicating that while some firms are highly leveraged, others exhibit negative leverage values, likely due to high equity relative to debt. Overall, the descriptive statistics suggest wide variations across firms in financial performance, working capital management, and capital structure.

### Correlation Analysis

The correlation analysis was carried out using Pearson Moment Correlation. The values of the correlation coefficient range from -1 to 1. The sign of the correlation coefficient indicates the direction of the relationship (positive or negative), while the absolute value of the correlation coefficient (magnitude) indicates the strength, with larger values indicating stronger relationships. The correlation coefficients on the main diagonal are 1.000, because each variable has a perfect positive linear relationship with itself (Adefila, 2008). The result of the correlation analysis is presented in Table 2.

Table 2 Correlation Matrix

| | ROE | ITO | CCC | APD | ARD | FS | LEVERAGE |
|---|---|---|---|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ROE | 1.0000 | | | | | | |
| ITO | -0.2129 | 1.0000 | | | | | |
| CCC | 0.4967 | 0.4571 | 1.0000 | | | | |
| APD | -0.3284 | 0.3258 | 0.1921 | 1.0000 | | | |
| ARD | -0.0499 | 0.3762 | 0.5957 | 0.8958 | 1.0000 | | |
| FS | 0.1166 | -0.5050 | -0.3717 | -0.1730 | -0.2654 | 1.0000 | |
| LEVERAGE | -0.2140 | 0.0900 | -0.2607 | 0.3072 | 0.1196 | 0.0861 | 1.0000 |

*Source: STATA Output (2025).*

The correlation matrix reveals the relationships among the study variables. Return on Equity (ROE) shows a weak negative correlation with Inventory Turnover (ITO) (r = -0.2129) and Accounts Payable Days (APD) (r = -0.3284), suggesting that higher turnover or longer payment periods do not necessarily enhance profitability. Also, ARD has a negative and weak relationship with ROE (r =-0.0499). ROE, however, has a moderate positive association with the Cash Conversion Cycle (CCC) (r = 0.4967) and Firm Size (FS) (r = 0.0916), indicating that larger firms and longer cash cycles may slightly contribute to improved returns. Interestingly, ROE exhibits a weak negative correlation with Leverage (r = -0.2140), implying that higher debt levels are associated with lower profitability. Looking at working capital components, ITO is positively correlated with CCC (r = 0.4571), APD (r = 0.3284), and ARD (r = 0.3762), showing that firms with higher inventory turnover tend to also experience longer receivable and payable periods as well as extended cash cycles. CCC itself strongly correlates with ARD (r = 0.5957), meaning receivables play a significant role in determining cash cycle length. APD and ARD are very highly correlated (r = 0.8958), suggesting that firms that delay payments also tend to extend receivables, possibly reflecting consistent credit policy practices. Firm Size (FS) displays weak negative correlations with ITO, CCC, APD, and ARD (r=-0.5050, -0.3717, -0.1730 and -0.2654 respectively), indicating that larger firms are generally more efficient in managing working capital. Finally, Leverage is positively correlated with APD (r = 0.3072) and weakly with ARD (r = 0.1196), but negatively correlated with CCC (r = -0.2607), suggesting that more indebted firms may rely on delaying payables but shorten overall cash cycles.

Diagnostic Test

In order to carry out regression analysis, the data collected must meet some certain assumptions which regression analysis is based on. The following are the assumptions as stated by Adefila (2014); a linear relationship must exist between explain and explanatory variables, the data must be normally distributed, and the variables are real random variables. These tests were conducted and explained to permit the use of the regression analysis. Standard skewness and standard Kurtosis were applied to test the normality of the data collected, variance inflation factor and tolerance coefficient were used to test the presence of multicollinearity, while Durbin Watson test was used to checked the presence of autocorrelations and the results of these tests are presented in Table 3.

Table 3: Diagnostic Test Result

| Variables | VIF | 1/VIF |
|---|---|---|
| ROE | | |
| ITO | 1.63 | 0.614540 |
| CCC | 2.19 | 0.456886 |
| APD | 2.32 | 0.421941 |
| ARD | 1.78 | 0.561125 |
| FS | 1.40 | 0.712084 |
| LEVERAGE | 1.30 | 0.771042 |
| Breusch-Pagan/Cook-Weisberg test | $Chi^2 = 1.06$ | PROB. = 0.3029 |

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| | | |
|---|---|---|
| Durbin-Watson Test = 1.934 | $Chi^2$ prob. = 0.0020 | |
| Ramsey RESET test | F(5, 134) = 9.71 Prob | Prob > F = 0.0600 |
| Wald $chi^2$ (5) = 218.62 | > $chi^2$ = .0000 | |

Source: STATA Output (2025).

From Table 3, Multicollinearity was assessed using the Variance Inflation Factor (VIF) and tolerance values (1/VIF) as recommended by Gujjirati (2010) and Hair et al. (2019). The VIF values for ITO is 1.63, CCC is 2.19, APD is 2.32, ARD is 1.78, FS is 1.40 and LEVERAGE is 1.30 with APD showing the highest VIF (2.32), which were all below the threshold of 10, and still acceptable, indicating no severe multicollinearity problem. The tolerance values for ITO is 0.614540, CCC is 0.456886, APD is 0.421941, ARD is 0.561125, FS is 0.712084 and LEVERAGE is 0.771042. The tolerance for all the variables were more than 0.10. Implying that, there is absence of multicollinearity in the data.

Heteroskedasticity test

The Breusch-Pagan/Cook-Weisberg test result indicates the presence of heteroskedasticity, as the reported Chi-square probability is 0.3029, which is greater than 0.05, meaning the null hypothesis of homoscedasticity is accepted. This suggests that the error terms in the data have constant variance.

Model Specification Test

In order to examine whether endogeneity exists in the model which could lead to biased coefficient, a Hausman model specification test was conducted to make the choice between Fixed Effect (FE) and Random Effect (RE). The result of the analysis is presented in Table 4.

Table 4: Hausman Test Result

| Coefficients | (b) | (B) | (b-B) | sqrt(diag(V_b-V-B) |
|---|---|---|---|---|
| | Fixed Effect | Random Effect | Difference | S.E. |
| ITO | -.0399257 | -.0662335 | .0263078 | .0558673 |
| CCC | .0629049 | .0601567 | .0027482 | .0063455 |
| APD | -.0046493 | -.0054135 | .0007643 | .0039723 |
| ARD | .1067828 | .1436282 | .0120544 | .0437324 |
| FS | 8.468134 | 7.29012 | 1.178014 | 7.329579 |
| LEVERAGE | -5.730099 | -5.746569 | .0164698 | .2964057 |

*Source: STATA Output (2025)*

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg
Test: Ho: difference in coefficients not systematic
chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)= 0.36
Prob>chi2 = 0.9964

The Hausman test result provides evidence on whether the fixed effects or random effects model is more appropriate for the data. The coefficients under the fixed effect (b) and random effect (B) estimations are fairly close to each other across all variables, with very small differences (b–B). For instance, Inventory Turnover (ITO) has a difference of 0.0263, Cash Conversion Cycle (CCC) has 0.0027, and Accounts Payable Days (APD) has 0.0008, while leverage also shows a minimal difference of 0.0165. Even for Firm Size (FS), although the coefficient values appear large, the difference between fixed and random estimates is still quite small relative to the scale. The standard errors of the differences are generally larger than the coefficient gaps, further suggesting that the two models produce very similar results.

The formal Hausman test statistic reports a Chi-square value of 0.36 with a probability of 0.9964,

which is far above the 5% significance level. This means the null hypothesis that the difference in coefficients between the fixed and random effects models is not systematic cannot be rejected. In practical terms, this indicates that the random effects model is more efficient and appropriate for this study compared to the fixed effects model, as it assumes that individual-specific effects are uncorrelated with the explanatory variables.

Regression Analysis

Since the result of diagnostic tests presented in Tables 3 and Table 4 indicated that, the data collected were normally distributed, and there was no problem of multicollinearity and autocorrelation, multi-regression analysis was carried out at 5% significant level to analyze the data collected. Such multivariate analysis was undertaken to examine the effect of working capital management (WCM) on profitability of Nigeria listed consumer goods firms. The results of the analysis are presented in Table 5.

Table 5 Panel Regression Result

| ROE | Coef. | Std. Err. | Z | P>z | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| ITO | -0.17639 | 0.059885 | -2.95 | 0.003 | -0.29377 | -0.05902 |
| CCC | -0.19370 | 0.066201 | -2.93 | 0.004 | -0.324873 | -0.06254 |
| APD | -0.21142 | 0.06739 | -3.13 | 0.002 | -0.34519 | -0.07764 |
| ARD | 0.214102 | 0.06739 | 3.18 | 0.002 | 0.080574 | 0.347629 |
| FS | 0.658872 | 5.06691 | 0.13 | 0.897 | -9.38056 | 10.6983 |
| LEVERAGE | -1.10885 | 0.684614 | -1.62 | 0.108 | -2.46533 | 0.247624 |
| _CONS | 76.52593 | 90.38564 | 0.85 | 0.399 | -102.5616 | 255.6135 |
| F(12, 112) = 3.25 | | | | | | |
| Prob > F = 0.0088 | | | | | | |
| $R^2$ = 0.6260 | | | | | | |

*Source: STATA Output (2025) @ 5% significance level*

The panel regression results reveal important insights into the determinants of Return on Equity (ROE). Inventory Turnover (ITO) is found to have a significant effect on ROE (Coef. = -0.1176, p = 0.003). This implies that higher inventory turnover enhances profitability of listed consumer goods firms. The finding suggests that efficient inventory management such as reducing holding costs, avoiding stock obsolescence, and ensuring steady product movement improves firms' return on equity. Thus, firms that manage their inventory effectively can increase liquidity and profitability. In contrast, the Cash Conversion Cycle (CCC) has a significant effect on the ROE (Coef. = -0.194, p = 0.004), indicating that longer cash conversion periods are linked to improved profitability, possibly because firms with extended cycles can generate more returns from credit sales or delayed outflows. Similarly, Accounts Payable Days (APD) also shows a negative and significant effect on ROE (Coef. = -0.211, p = 0.002), suggesting that firms that take longer to settle their payables reduce their short-term liquidity and profitability by using supplier credit as a source of financing. Accounts Receivable Days (ARD), however, exhibit a positive and statistical significant effect on ROE (Coef. = 0.214, p = 0.002), meaning that the time firms take to collect receivables play a significant role in profitability within the period of the study. Firm Size (FS) has a strong positive and highly significant effect on ROE (Coef. = 0.658, p = 0.13), indicating that larger firms tend to be more profitable, possibly due to economies of scale, stronger market power, and more efficient resource utilization. On the other hand, Leverage has a significant negative effect on ROE (Coef. = -1.109, p = 0.108), showing that firms with higher debt levels experience reduced profitability, likely due to higher interest obligations and financial risk. The model overall is statistically significant, as shown by the F-statistic (F(12,112) = 9.71, Prob > F = 0.0088), confirming that the explanatory variables jointly explain variations in ROE. The $R^2$ value of 0.6260 indicates that approximately 62.6% of the variation in ROE is explained by the included independent variables, while the remaining 37.4% variation is attributable to other factors not captured in the model.

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Table 6 Summary of Hypothesis Testing Results

| Hypothesis | Predictor Variable(s) | Decision |
|---|---|---|
| $H_{01}$ | Inventory Turnover (ITO) | Rejected |
| $H_{02}$ | Cash Conversion Cycle (CCC) | Rejected |
| $H_{03}$ | Accounts Payable Days (APD) | Rejected |
| $H_{04}$ | Accounts Receivable Days (ARD) | Rejected |

*Source: STATA Output (2025) @ 5% significance level*

## VI. SUMMARY OF FINDINGS

This study examined the impact of working capital management on the profitability of listed consumer goods firms in Nigeria. The following findings emerged from the analysis:

i. Inventory Turnover (ITO) had a significant negative effect on profitability (ROE). This implies that higher inventory turnover may reduce profitability, likely due to increased operational costs or stock shortages.
ii. Cash Conversion Cycle (CCC) showed a significant negative relationship with profitability, indicating that longer cycles enhance firm returns by allowing firms to utilize trade credit effectively.
iii. Accounts Payable Days (APD) exerted a significant negative effect on profitability, suggesting that extending payment periods improves firm performance by supporting liquidity management.
iv. Accounts Receivable Days (ARD) showed positive significant effect on profitability, implying that receivables management may be a strong determinant of profitability in the Nigerian consumer goods sector.

The findings emphasize that efficient working capital management is a key driver of profitability in Nigerian consumer goods firms. Specifically, managing payables and the cash conversion cycle enhances firm performance, while excessive reliance on debt financing undermines profitability.

Table 7 Summary of Findings

| Objective | Findings |
|---|---|
| 1 | Inventory Turnover (ITO) had a significant effect on profitability of consumer goods sector in Nigeria. |
| 2 | Cash Conversion Cycle (CCC) had a significant effect on profitability of consumer goods sector in Nigeria. |
| 3 | Accounts Payable Days (APD) had a significant effect on profitability of consumer goods sector in Nigeria. |
| 4 | Accounts Receivable Days (ARD) had a significant effect on profitability of consumer goods sector in Nigeria. |

## VII. CONCLUSION AND RECOMMENDATIONS

### Conclusion

The present study examined the effect of working capital management and firm-specific characteristics on profitability, with Return on Equity (ROE) as the financial performance measure. The panel regression analysis was used and the findings produced both expected and counterintuitive results, which provide important insights for corporate financial management and policy decisions. The study revealed that Inventory Turnover (ITO) has a

significant negative effect on ROE. This means that as firms increase their rate of inventory turnover, profitability declines significantly. In principle, higher inventory turnover should signal operational efficiency and lead to better financial outcomes. However, the negative effect observed here suggests that firms may be engaging in distress sales, excessive discounting, or poor inventory control practices, which erode profit margins. This finding highlights the fact that efficiency in inventory turnover does not automatically translate into profitability unless it is accompanied by effective cost management and pricing strategies. This conclusion is in agreement with the conclusion of Yusuf & Musa (2020), who reported a negative effect of ITO of profitability, highlighting that the nature of the industry and efficiency in managing stock may moderate the relationship. But, is not in agreement with the conclusion by Nwaobia and Adewale (2021) who discovered a positive relationship between inventory turnover and profitability in manufacturing firms. Moreover, the result on the Cash Conversion Cycle (CCC) showed a significant effect on ROE. This finding implies that firms with longer cash conversion cycles are able to improve their profitability. As such, it is concluded that, cash conversion ratio has a significant effect on profitability of consumer goods in Nigeria. This conclusion is in agreement with the conclusion of Akinyomi and Olagunju (2021) who reported that efficient management of the cash conversion cycle improves firm performance. Traditionally, a shorter CCC is considered beneficial, as it enhances liquidity. However, in this context, firms appear to benefit from maintaining a relatively longer CCC, possibly because extended credit terms to customers stimulate sales growth, while careful management of working capital ensures that liquidity risks are minimized. This suggests that Nigerian firms may be strategically using their cash conversion cycles not only as a liquidity tool but also as a mechanism to drive profitability through credit sales. Moreover, the findings of the study indicated that Accounts Payable Days (APD) significantly and positively affect ROE. As such, it is concluded that account payable has a significant effect on the profitability of consumer goods firm s in Nigeria. This means that firms that delay payments to suppliers enjoy better profitability. The implication is that trade credit acts as a form of cost-free financing, allowing firms to conserve cash and allocate resources to other productive ventures before settling supplier obligations. In this way, stretching payable periods provides firms with financial flexibility, thereby boosting returns to shareholders. This conclusion is in line with the pecking order theory, which gave more emphasizes on cheaper internal financing and short-term liabilities before resorting to external debt. The present conclusion is consistent with conclusion by Okoye and Afolabi (2021), who concluded that, longer payable periods allow firms to improve cash flow and profitability In addition, Accounts Receivable Days (ARD) were found to exert a positive and statistically significant effect on ROE. The statistical significance implies that receivables management play a meaningful role in determining profitability for the firms studied. In essence, while extending credit to customers might increase sales, the inability of firms to efficiently recover outstanding debts diminishes its potential profitability benefits. Therefore, it concluded that, account receivable days have statistical significant effect on the profitability of listed consumer goods firm in Nigeria for the period of the study.

Recommendations

i. Since the study found that inventory turnover has a significant effect on profitability of consumer goods firms in Nigeria. Therefore, it is recommended that, firms are to adopt more efficient inventory management systems. This includes embracing modern technologies such as Enterprise Resource Planning (ERP) systems, Just-in-Time (JIT) inventory practices, and demand forecasting techniques to strike a balance between turnover efficiency and profitability. Managers should avoid distress sales or excessive discounting practices, which reduce profit margins. Instead, emphasis should be placed on optimizing stock levels to meet customer demand without sacrificing profitability.
ii. The study found a significant effect of the cash conversion cycle on profitability suggests that firms benefit from strategically extending their CCC. It is recommended that, managers of consumer goods firms in Nigeria should design credit policies that promote sales growth while maintaining strong receivables collection practices to minimize the risk of default. Firms are also encouraged to maintain efficient coordination between inventory, receivables, and payables to achieve an optimal CCC. Policymakers can also support firms by

improving the financial infrastructure that facilitates credit access and effective cash flow management.

iii. Since accounts payable days were found to significant effect on the profitability of consumer goods firms in Nigeria, firms are encouraged to negotiate favorable credit terms with suppliers. Extending payable periods allows companies to use trade credit as a form of cost-free financing. However, firms must ensure that delayed payments do not damage supplier relationships or lead to the loss of supplier goodwill. Managers should therefore adopt a balanced approach, leveraging trade credit for financial flexibility while maintaining long-term trust with suppliers.

iv. The study found that, the account receivables days has a positive and significant effect on the profitability of consumer goods firms in Nigeria. Therefore, it is recommended that, the firms should efficiently recover outstanding debts which may significantly increases the profitability of the firms.

Areas for Further Research

Although this study provides useful insights into the relationship between working capital management components and the profitability of listed consumer goods firms in Nigeria, there remain several areas for further investigation. Expanding the scope and refining the methodologies could enhance the robustness of findings and contribute to more comprehensive knowledge in this field.

Knowledge Contributions

The present research provides significant contributions to both the theoretical and practical aspects of financial management, particularly in the context of working capital management (WCM) and profitability. By addressing gaps in the literature and offering context-specific insights, the study enhances academic discourse and provides valuable implications for firms, regulators, investors, and policymakers in Nigeria and other emerging markets.

Author's statements - Disclosures

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Data Availability- This study used secondary data, which was extracted from the audited annual reports and financial statements of selected listed consumer goods firms in Nigeria. This approach is consistent with prior studies on working capital management and corporate profitability that relied on publicly available financial disclosures (Chukwuma & Musa, 2023; Bello & Ismaila, 2020; Ibrahim & Salisu, 2019). The data collected span a ten-year period (2013–2023), allowing for a robust longitudinal analysis.

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