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LIQUIDITY MANAGEMENT AND FINANCIAL PERFORMANCE OF NIGERIAN LISTED CONSUMER GOODS MANUFACTURING FIRMS

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ABSTRACT

Financial performance is paramount to the survival of every business organization, especially in a dynamic competitive market environment where the majority of these firms operate. Thus, this present study examines the relationship between liquidity management and financial performance of Nigerian listed consumer goods firms. The study adopted an *Ex-post facto* research design, utilizing data generated from audited financial statements of ten (10) consumer goods manufacturing firms, throughout ten (2014 to 2023) years. The study employed descriptive and inferential statistics. The study found a negative significant relationship between the Current Ratio and Return on Assets ($P<0.05$). Also, the study showed a negative significant relationship between the Receivables Collection Period and Return on Assets ($P<0.05$). However, there was a positive insignificant relationship between the Payables Payment Period and Return on Assets ($P>0.05$). The study concluded that consumer goods manufacturing firms should formulate robust policies for liquidity management that enhance the financial performance of consumer goods manufacturing firms in Nigeria. Such policies should include the proactive process of ensuring the availability of cash in hand to meet financial obligations at the right time. In addition, embedding policies that encourage early payments such as offering discounts for prompt payments and follow-up with debtors to collect debts at the appropriate time. The study suggested that such policies should include a shorter receivable collection period with longer payables payment periods and follow up regularly with customers whose debts are due.

Keywords: Return on assets, Current ratio, Receivable collection period, and Payable payment period

1 Introduction

The financial well-being of consumer goods manufacturing firms in Nigeria is dependent on the effective management of liquidity (Onuora & Ifeacho 2017). Efficient liquidity management is a pivot, essential for the survival of business. Liquidity management involves factors such as low transaction costs and immediacy of execution. Inadequate liquidity and profitability lead businesses into bankruptcy as firms with low liquidity might face possible potential bankruptcy risk even with a higher profitability. Conversely, those operating with low liquidity, freeing up funds, may experience a higher insolvency risk but with

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a potential trade-off of increased profitability. The study emphasizes the need for a well-defined policy to effectively manage, and monitor liquidity which is crucial for a firm's survival and value addition to shareholders' wealth (Ahmad, Sulaiman & Mohamma 2021).

Inadequate liquidity, arising from factors like quick sales or paying interest on borrowings to meet obligations, poses significant threats to the survival of consumer goods firms (Dadepo & Afolabi, 2020). Poor liquidity management leads to insufficient liquidity and eventual bankruptcy (Majakusi, 2016). The consequences of poor financial performance affect decision-making processes by managers, investors, and financial analysts. Shareholders rely on profitability information as a benchmark for dividend payments, and regular payment of dividends is an instrument to evaluate management efficiency (Akenga, 2017).

The major concern of most organizations is shareholders' wealth maximization while the need for efficient management of liquid assets receives less attention. This is justified by the belief that profitability and liquidity are conflicting goals. Hence, some firms pursue one at the expense of the other, in line with the theory of liquidity and profitability trade-off. Padach, (2006) suggested that a firm should strive to strike a balance between liquidity and profitability while undertaking daily activities. Simply because both insufficient and excess liquidity may affect profitability negatively (Olabisi, Oladejo, Oworu & Abioro, 2020).

Liquidity often refers to the ability of businesses to meet short-term financial obligations by easily converting short-term assets into cash without sustaining any loss. Liquidity measures the ability of a business to pay its short-term debts as of the due date. Current assets are components of liquidity because of the ease of convertibility to cash. Many business failures are traceable to the failure of a business to pay obligations to short-term creditors at the appropriate time; even when the business is making profits and has a long-term financial strength (Price, Haddock, & Brock, 2003). Hence, liquidity management is crucial for business survival as business activity is growing and the environment rapidly changing. Liquidity management is a concept that has received thoughtful attention globally, especially with the current financial and economic predicament. Resourceful management of working capital is obligatory to preserve the smooth running of the day-to-day activity of business such as fulfillment of debt promises to creditors and maximizing shareholder wealth (Olabisi, Oladejo, Oworu & Abioro, 2020). Liquidity levels should neither be excessive nor inadequate. Excessive liquidity indicates a company's idle or unutilized funds that may lead to poor financial performance that may increase speculation. However, inadequate liquidity may lead to interruptions of business operations.

Liquidity management determines the level of profitability of any business because a firm must be liquid to survive, failure to meet business obligations in due time results in bad credit rating by short-term creditors, negative goodwill in the market, and ultimately liquidation (Bhavet, 2011). Hence, a good financial management policy strives to maintain sufficient liquidity to settle short-term obligations without harming profitability. Business finance, in the aftermath of the global financial crisis, has been a major concern for finance managers as businesses are becoming risky to manage due to tightening local and international financial markets. Also, the unwillingness of the public to invest in shares sequel to the crash in the capital market. These occurrences have forced business managers to devise tactics for generating revenue internally to improve business profitability and meet shareholders' expectations.

Various studies such as Olabisi, Oladejo, Oworu, and Abioro, (2020); Dadepo and Afolabi, (2020) concluded that consumer goods firms in Nigeria are bedevilled by liquidity management problems such as selecting where to invest. The cash at hand by businesses might present an opportunity cost or may be a basis for sustained profit generation through the stability it brings to the business. The importance of this study is to offer invaluable insights that guide policymakers, managers, and investors to embrace liquidity management strategies that can advance inclusive financial performance. This study is prompted by the imperativeness to comprehend the challenges arising from inadequate liquidity management and its subsequent impact on key financial indicators. Hence, this study assesses the relationship that

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exists between liquidity management and financial performance (measured by ROA) of Nigerian listed consumer goods manufacturing firms. The specific objectives are to:

i. assess the relationship that exists between the current ratio and return on asset of consumer goods manufacturing firms in Nigeria;
ii. examine the relationship that exists between the receivable collection period and return on assets of consumer goods manufacturing firms in Nigeria; and
iii. investigate the relationship that exists between payable payment period and return on asset of consumer goods manufacturing firms in Nigeria.

The remaining sections of this paper dealt with a literature review. The third part dealt with the methodology adopted for the study. The fourth section presented the data and results of the analysis while the fifth section discussed the findings. The succeeding section made a conclusion and recommendations and ended with a contribution to knowledge.

2 Literature Review

2.1 Conceptual Review

2.1.1 Liquidity

Liquidity is the amount of funds available for short-term investment or day-to-day operations of any business enterprise. The liquidity of a business describes the capability of a business entity to keep enough cash funds to defray obligations that are due for payment at a cost that is reasonable every time. Liquidity is the business's ability to meet cash and banks' obligations when due. It implies the financial fitness of a business to obtain new loan demand while fulfilling the prevailing reserve requirements. The continuity and survival of consumer goods manufacturing firms are functions of how liquid businesses are, and a poor liquidity position of a business is a sign of imminent liquidity of a business (Agbada 2017).

Current Ratio

The current ratio is a liquidity ratio that reveals a business's capability to be able to meet short-term liability payable within one year. The current ratio provides information to investors and analysts about the fitness of a company to exploit the current assets shown in the company's balance sheet to meet current liabilities that are payables within an accounting period. A current ratio within the industrial average or slightly higher is widely acceptable by financial managers. When the current ratio is lower than the industrial average, it implies a greater risk of business insolvency. Also, if a company has a very high current ratio when compared with the industrial average, it points to the possibility of management not efficiently using their assets. Quick ratio considers only the highly liquid of current assets to current liabilities. When the quick ratio results in 2:1, it shows that the company has high liquidity. Due to the difficulty of cash conversion, the quick ratio always ignores inventory and prepaid expenses from current assets (Sinha, 2012). The ideal standard of current ratio is 1:1

Receivable Collection Period

Onuora and Ifeacho (2017) posited that receivables stimulate sales as they enable customers to assess product quality before making paying. However, debtors produce funds that have an opportunity cost. There are three characteristics of receivables namely; the element of risk, economic value, and futurity. These characteristics explain the foundation and need for efficient management of receivables (Onuora & Ifeacho, 2017). Accounts receivable indicates debtors' collectibles and unpaid claims of a firm from credit customers at a given time. This usually comes in the form of an operating line

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of credit and receivable within a short time of less than one year. The bulk of accounts receivable indicates the business's supply of trade credit while accounts payable reveal the business's demand for trade credit (Akenga, 2017).

Payables Payment Period

Payables Payment Period reveals the average time it takes to pay creditors for goods supplied on credit. The payables Payment Period is a 'performance ratio that shows the efficiency of a business. The Creditor (or payables) days number is a similar ratio to debtor days and it gives an insight into whether a business is taking full advantage of trade credit available to it. The payable payment period explains the average time it takes a business to settle its debts with trade creditors. The payable payment period is a suitable pointer to the liquidity position of a business as an estimate of the amount incurred on trade creditors, the convention is to use the cost of sales in the formula.

Return on Assets (ROA)

Return on Assets (ROA) emerges as a critical metric, denoting a company's ability to generate earnings from the capital tied up in its balance sheet. While correlations between Quick Ratio (QR) and Working Capital Ratio (WCR) with ROA showcase positive relationships, regression analysis in the pharmaceuticals and chemicals sector of Bangladesh suggests no significant association between liquidity and profitability. Key liquidity ratios such as the Current Ratio, Quick Ratio, and Receivable Collection Period play pivotal roles in influencing ROA, indicating the intricate relationship between liquidity management and financial performance (Sawir, 2009; Zygmunt, 2013).

2.2 Theoretical Review

The study will benefit significantly from the incorporation of stakeholder theory, signaling theory, and performance theory. Each theory brings a unique perspective to the investigation, enhancing the overall analysis.

Stakeholder Theory: Stakeholder theory suggests that organizations should consider the interests of various stakeholders beyond shareholders. In the context of the research, stakeholders encompass not only investors but also suppliers, employees, customers, and the wider community. A thorough examination of liquidity management and financial performance through the lens of stakeholder theory would involve assessing how the strategies employed impact not only shareholder value but also the interests of other stakeholders. This may include evaluating the firm's commitment to ethical business practices, environmental sustainability, and social responsibility.

Signaling Theory: Signaling theory posits that firms use specific signals to convey private information to external parties. In the realm of liquidity management and financial performance, firms may use signals to communicate their financial health and prospects. The research can explore how Nigerian listed consumer goods manufacturing firms signal their liquidity positions and financial performance to investors and other stakeholders. This analysis may involve scrutinizing the choice of liquidity ratios, dividend policies, and investment decisions as signals to convey the firm's financial strength or potential challenges.

Performance Theory: Performance theory was introduced by Richard Schechner and formalized in 1988. Performance Theory provides a valuable context for evaluating various performance, especially within the business sector. This theory helps to understand the dynamics of liquidity management and financial performance of Nigerian listed consumer goods manufacturing firms.

The focal point of performance theory is the concept of "restored behaviour," which posits that performance is composed of actions rehearsed and repeated. In the context of liquidity management, performance is seen in the repeated financial practices and strategies firms employed to maintain optimal

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liquidity levels. These strategies are not impulsive but based on traditional financial policies, past experiences, and industry standards. Effective liquidity management, therefore, involves repetitive and refined financial behaviours that guarantee firms meeting short-term obligations while investing in long-term growth.

Schechner's distinction of performances is aimed at achieving specific effects (efficacy). In business context, liquidity management practices are primarily aimed at achieving efficiency and ensuring firm's financial stability and operational efficiency. These practices are designed to have a tangible impact on firm's ability to manage cash flow, pay off debts, and invest in opportunities that enhance financial performance. Effective liquidity management requires transparent communication and strategic actions that reassure stakeholders about the firm's financial health, thereby influencing their perceptions and decisions.

2.3 Empirical Review

Ogungbade and Adekoya (2020) examined the effect of liquidity management on the performance of listed manufacturing companies in Nigeria. An explanatory research design was adopted in the study by extracting data from audited financial statements of sixteen (16) manufacturing firms in the consumer goods sector over ten (2009-20180 years. The data collected were analyzed with descriptive and inferential statistics. The study found that the quick ratio has a significant and adverse effect on the performance of listed manufacturing firms in Nigeria. In contrast, the current ratio and cash conversion cycle have no considerable impact. The study concluded that liquidity has a substantial effect on the performance of manufacturing companies in Nigeria. The study suggested that manufacturing firms should strictly comply with policies that back the proper balance between liquidity position and profitability.

Adesina and Olatise (2020) investigated the impact of liquidity management on the performance of ten manufacturing firms in Nigeria. The study covered a period of five (2012-2016) years. The study generated data from the financial statements of selected firms. For analysis, descriptive and inferential statistics were adopted for the analysis. The result of the study showed that the current ratio has an inverse significant impact on the profitability (ROA) of the selected manufacturing firms while quick and cash ratios have a positive but insignificant relationship with ROA. The study suggested proper attention to Liquidity management in the manufacturing firms in Nigeria to improve profitability.

Yahaya (2020) assessed the effect of liquidity management on the profitability of manufacturing firms in Nigeria. A censure sample size was used because the study collected data from all the listed manufacturing firms in Nigeria. Secondary data were obtained from the financial statements of the listed firms throughout five (2008-2017) years. Data collected were analyzed using Ordinary Least Square regression techniques. The study found that the current ratio has a positive relationship with return on assets while the quick ratio has a negative relationship. However, both have an insignificant relationship with the profitability of manufacturing firms. Furthermore, the debt ratio has a positive and significant relationship with the return on assets. The study suggested that management should manage their debt in such a way that will not adversely affect profitability since the debt ratio has a significant influence on profitability.

Olabisi, Oladejo, Oworu, and Abioro, (2020) examined the effect of working capital management on the profitability of consumer goods manufacturing firms in Nigeria between the periods of ten (2009 to 2018) years. Ex-post-facto research design was employed together with data from audited financial statements of consumer goods manufacturing firms. A purposive sampling technique was adopted to select ten (10) firms out of twenty-four (24) listed consumer goods manufacturing firms. The surrogates for independent variables were the Account Payable Period (APP), Account Receivable Period (ARP), Inventory Turnover Period (INVTP), Cash Conversion Cycle (CCC), and Sales Growth (SG) was the control variable while the proxy for profitability was Return on Assets (ROA). The study adopted descriptive and inferential statistics analysis for the study. The study found that ARP, INVTP, and CCC had a negative and significant relationship with ROA. The study concluded that timely collection of debts

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and shorter inventory turnover periods with a cash conversion cycle enhance the profitability of consumer goods manufacturing firms. Hence, the study suggested that the management of consumer goods manufacturing firms should implement efficient working capital management for improved profitability.

Ofoegbu, Duru, and Onodugo (2016) examined the impact of liquidity management on the profitability of quoted pharmaceutical companies in Nigeria. The study's variables were the liquidity ratio, debt ratio, receivable period, and sales growth ratio. The secondary data were extracted from the annual reports and accounts of selected pharmaceutical companies in Nigeria over ten (2000 to 2011) years. Multiple regression was used to analyze the collected data. The findings showed that the liquidity ratio has a positive and significant relationship with profitability. The debt ratio and sales growth ratio have a positive and insignificant impact on profitability. The receivable ratio has a negative and insignificant impact on the profitability of listed pharmaceutical companies in Nigeria. The study suggested that pharmaceutical companies should pay more attention to liquidity ratios to enhance business profitability.

Ahmad, Sulaiman and Mohammad (2021**)** examined the impact of liquidity and solvency management on the financial performance of Jordanian manufacturing companies listed on the Amman Stock Exchange. The study covered a period of ten years (2010 to 2019). The company's size was used as a control variable. The study employed Return on Assets (ROA) and Earnings Per Share (EPS) to measure financial performance. The current ratio (CR) and Total Debts to Total Assets (TD/TA) were used as proxies for liquidity and solvency management, while the logarithm of total assets was used to measure the company's size. Correlation and multi-regression analyses were adopted for data analysis. The results showed a statistically significant impact of liquidity and solvency management on financial performance. Furthermore, the results revealed that liquidity has a negative and insignificant impact on financial performance. The control variable (firm size) has a positive and significant impact on performance. The study suggested an increased investment in companies' assets by focusing on internal financing, such that large-sized companies with low leverage would improve their performance.

Wuave, Yua, and Yua (2020) examined the effect of liquidity management on the financial performance of banks in Nigeria. The study covered a period of eight (2010 to 2018) years. The data for the study were extracted from the financial statements of five listed deposit money banks in Nigeria. The independent variable (liquidity management) was measured with; Liquidity ratio (LQR), Loan-to-deposit ratio (LDR), Cash reserve ratio (CRR), and deposit ratio (DR), while the dependent variable financial performance) was measured with return on assets (ROA), return on equity (ROE), and Net Interest Margin (NIM). The study used panel regression analysis to estimate the model. The study found that liquidity ratio (LQR) has a positive and significant effect on return on assets return on equity and net interest margin. The study suggested that deposit money banks in Nigeria should formulate good policies on governance and risk management that accept liquidity management as significant to risk management practices. Deposit money banks should also establish a contingency funding plan to address any liquidity shortfall during any stress period while confirming active monitoring of liquidity to prevent any form of liquidity problem that could trigger a crisis among deposit money banks.

Lazaridis and Tryfonidis (2010) examined the relationship that exists between profitability and liquidity management of 131 firms listed on the Athens Stock Exchange. The study employed panel data methodology within a study period of four (2001-2004) years. The study adopted cash conversion cycle, accounts receivables days, and inventory days to measure liquidity management, while gross operating profit was used to measure profitability. The study established that working capital management has an inverse significant relationship with gross operating profit.

Adamu and Hussaini (2015) examined the effect of liquidity management on deposit money banks in Nigeria. The study's period was six (2007 to 2013) years and data were gathered from the selected deposit money banks financial statements. Ordinary Least Square regression, a robustness test, was conducted to confirm statistical inferences. The results found a strong positive relationship between the current ratio; quick ratio and ROA of selected listed deposit money banks, while the cash ratio was

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found to be inversely and significantly related to the return on assets of listed deposit money banks in Nigeria.

Adebimpe and Ekubiat (2015) investigated the impact of working capital management on the profitability of select deposit money banks in Nigeria. The sample size of ten deposit money banks was determined using Yamane's statistical technique. The formulated hypotheses were designed to guide the study. The data collected were analyzed using descriptive and inferential statistics. The findings showed a positive significant relationship between bank size and profitability of deposit money banks. While a negative significant relationship was found between the cash conversion cycle; leverage, and profitability of Nigerian listed deposit money banks. Also, a negative significant relationship was established between liquidity; creditors' payment period; leverage, and profitability of deposit money banks.

Olaitan (2017) examined liquidity management and performance of deposit money banks in Nigeria using the oldest and biggest bank in the country as of 2016. The study employed time series data throughout thirty-five (1981-2015) years. The study established that there was no significant relationship between cash conversion cycles like debt collection and creditors' payment with performance as separate variables in a single regression. The study opined that access to long-term funds could boost efficient working capital management and enhance banks' profitability. The result supported the use of creditor payment period and debt collection period as the estimation produced robust results.

Otekunrin, Fagboro, and Femi (2019) examine liquidity management and performance of selected quoted deposit money banks in Nigeria. The study used fifteen (15) listed deposit money banks in Nigeria. Secondary data were extracted from the financial statements of the selected banks over six (2012 and 2017) years. Capital Ratio (CTR), Current Ratio (CR), and Cash Ratio (CSR) were proxies for liquidity management while Return on Assets (ROA) was the proxy for financial performance. The study used the Ordinary Least Square method (OLS) for data analysis. The study discovered that liquidity management and bank performance were positively related and concluded that liquidity management determines to a large extent profitability success of selected deposit money banks in Nigeria. The study suggested the right management of liquidity to solve the agency costs problem that normally arises due to the separation of ownership from the business's control.

Onyekwelu, Chukwuani, and Onyeka (2018) assessed the effect of liquidity management on the financial performance of deposit money banks in Nigeria. The study's period was for ten (2007-2016) years. The study adopted a purposive sampling technique to select five deposit money banks out of the twenty-one listed banks as of 2017. Multiple regression analysis was used to analyze the data collected from the selected money deposit banks. The study showed that Liquidity has a positive and significant effect on profitability ratios and return on capital employed. The conclusion from the study was that banks should inform their customers about diverse products that enhance the liquidity position of deposit money banks. The suggestion from the study was that the regulatory authority put in place proper policy measures to control high-volume cash transaction handling and hoarding rampant within the economy.

Gaps in Literature

This study investigated the relationship between liquidity management and the financial performance of listed consumer goods manufacturing firms in Nigeria. Every literature review provided a basis for further inquiry into the study area of liquidity management and financial performance. Most of the literature reviewed has examined various areas of liquidity management and financial performance. However, there is no universally acceptable explanation of the relationship between liquidity management and financial performance. The discrepancy in opinion might be a result of different political or economic factors at the time the studies were being undertaken or from the fact that previous studies have used different proxies to examine liquidity management relationships.

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However, what was discovered with the majority of these studies is that there are sectorial focuses in the scope of the study such as manufacturing, banking, oil and gas, insurance companies and pharmaceutical. Also, the empirical literature has shown that there is a need to establish whether financial performance in the manufacturing sector is driven by issues related to liquidity management. The empirical literature has also shown that there is a need to understand whether managers and executives maintain proper and adequate liquid assets in such a way that enhances financial performance.

Therefore, with the gaps observed in the studies, this study attempts to bridge those gaps by focusing on manufacturing companies by examining the relationship between liquidity management and the financial performance of listed consumer goods manufacturing firms in Nigeria.

3 Methodology

Ex post facto research design was adopted. The design was considered appropriate for the study as the data adopted were already in existence and dealt with historical events. This study is quantitative because statistical analysis of the data of the variables specified in the models examined the relationship between the explanatory variables (liquidity management) and the performance of consumer goods firms. The population of this study comprised 24 listed consumer goods firms in Nigeria as of 2021. These categories of firms were into the production of goods for individual and household consumption. A purposive sampling technique was adopted to select ten (10) listed consumer goods firms that have the required information. The study extracted secondary data from the published accounts and reports of the selected consumer goods firms over ten years (2012-2021), making 100 observations. The external auditors had already audited and certified the financial statements where data adopted for the study to show a true and fair view, hence the data were reliable. The selected Nigerian Listed consumer goods manufacturing firms are CADBURY NIG. PLC, NESTLE NIG. PLC, FLOOR MILLS OF NIGERIAN PLC, GUINESS PLC, DANGOTE'S MILLS, HONEYWELL PLC, UNILEVER PLC, NIGERIAN BREW, CHAMPION BREW, LAFARGE AFRICAN PLC.

The study adopted a purposive sampling technique to choose the samples using the following criteria:

i. Listed Consumer Goods Firms on the Nigerian Stock Exchange (NSE) during the 2012 – 2021 period
ii. Listed Consumer Goods Firms that prepared and submitted their financial statements for review within the period 2012 -2021
iii. Listed Consumer Goods Firms that were in operation during the period under the study 2012 -2021
iv. Listed Consumer Goods Firms that consistently prepared accounts and submitted accounts without missing out on any year during the period under the review 2012 -2021.

Given the above criteria for the selection, ten (10) consumer goods manufacturing firms met the standards, and useful information was obtained from their annual audited accounts over 10 years (2012-2021). The study adopted descriptive and inferential statistics that highlight measures of central tendency and dispersion such as mean and standard deviation. The multiple regression models were adopted as a statistical technique to analyze the relationship between liquidity management and the financial performance of listed consumer goods manufacturing firms in Nigeria.

Model Specification

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Based on the research objective and research hypotheses, two multiple regression models were formulated. 'Y' represented the dependent variable while 'X' represented the independent variable.

Hence the functional relationship is expressed as follows:

$Y=f(X)$

$Y= (y_1)$

$X = (x_1, x_2, x_3)$

The function of this study will be:

$y_1= f (x_1; x_2; x_3)$

y_1 represents ROA

x_1 = Current Ratio (CUR)

x_2, = Receivable Collection Period (RCP)

x_3 = Payable Payment Period (PPP)

Hence, the multiple regression model formulated from the above is as follows:

$ROA_{it} = \beta_0 + \beta_1 CUR_{it} + \beta_2 RCP_{it} + \beta_3 PPP_{it} + e_{0it}$..... {Model 1}

Where; β = constant;
e= error term

Research Hypotheses

The following Hypotheses were formulated to guide the study:

Ho_1: there is no significant relationship between the current ratio and return on asset of consumer goods manufacturing firms in Nigeria

Ho_2: there is no significant relationship between the receivable collection period and return on asset of consumer goods manufacturing firms in Nigeria

Ho_3: there is no significant relationship between the payable payment period and return on asset of consumer goods manufacturing firms in Nigeria

Table 1: Measurements and Description of Variables

Variables	Abbreviations	Variable Formula
Current ratio	CUR	Current assets/ Current liabilities
Receivable Collection Period	RCP	Receivables/ net sales× 365 days
Payable Payment Period	PPP	Payables/ cost of sales ×365 days
Return on Assets	ROA	Net profit before tax/ total assets

Source: Researchers' Computation, 2023

4 Data Presentation and Results of Analysis

The table below presents the summary of the descriptive statistics of the proxies for the dependent variable (ROA) and the independent variable (CUR, RCP, and PPP) used in this study.

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Table 2: Descriptive Statistics

	ROA	CUR	RCP	PPP
Mean	0.089144	1.163847	0.073447	0.157574
Median	0.072063	1.075000	0.054789	0.158661
Maximum	0.264935	2.451505	0.460039	0.569649
Minimum	-0.087265	0.191959	0.006098	0.001764
Std. Dev.	0.075762	0.525062	0.072379	0.107163
Skewness	0.389524	0.585550	2.845121	0.858613
Kurtosis	2.658947	2.485051	13.46608	4.120763
Jarque-Bera	3.013471	6.819356	591.3235	17.52072
Probability	0.221632	0.033052	0.000000	0.000157
Sum	8.914355	116.3847	7.344668	15.75739
Sum Sq. Dev.	0.568242	27.29330	0.518631	1.136910
Observations	100	100	100	100

Source: Researchers' Computation, 2023

The results in Table 2 showed that ROA has a mean of 0.089144 which is approximately 9%, with a minimum value of -0.087265 and a maximum value of 0.264935. This indicated that on average, the consumer goods firm made a return of 8.9% on its total assets and this increased to a maximum of 26% also during the period covered, the selected consumer goods firm made a loss of 8.7%. This suggested that the selected consumer goods firms performed well but should work hard to enhance profits after tax. The standard deviation of 7.4% was below the mean, this showed that there was an insignificant variation between returns on assets of consumer goods firms. Furthermore, the current ratio had an average of 1.163847 an indication that firms' existing current assets were always greater than current liabilities during the period of study. The maximum current ratio was 2.451505 which means the firms' existing current assets were about 2.5 times the current liabilities. The minimum value of 0.191959 indicated that there were a few years that the selected consumer goods firms did not have enough funds to settle the short-term debt. This could be attributed to a greater proportion of liabilities compared with the available current assets. The RCP had an average value of 0.073447 with a minimum value of 0.006098 and a maximum value of 0.460039. This implies that during the period under investigation, the average number of days used to collect trade debtors was 27 days (0.073447 x 365) and the maximum number of days used to collect trade debtors was 168 days (0.460039 x 365) while the minimum number of days 1 day. The PPP had a mean value of 0.157574, with a maximum value of 0.569649 and a minimum value of 0.001764. This indicated that during the period under study, the average number of days used to pay trade creditors was 58 days and the maximum number of days used to pay trade creditors was 208 days (0.569649 x 365) while the minimum number of days was 1 day. From Table 4, ROA, CUR, RCP, and PPP had positive skewness. Kurtosis measures the peakiness or flatness of the series distribution. From the Table, the distribution of ROA and CUR signified a normal distribution as it does not exceed 3, while the distribution of ROE, RCP, and PPP peaked i.e., leptokurtic, relative to the normal. Finally, Jarque-Bera statistics revealed that ROE, CUR, RCP, and PPP were not normally distributed as their probability values were significant while ROA was normally distributed as its probability value was significant.

Correlation Analysis

The table below shows the correlation coefficients between the variables. That is, it shows if there is an association between every two pairs of variables in the model. This section carries out a preliminary check on the possibility of the presence of multicollinearity among the variables and discusses the direction and the degree of their association.

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Table 3: Correlation

	ROA	CUR	RCP	PPP
ROA	1			
CUR	0.02	1		
RCP	-0.09	0.10	1	
PPP	0.11	-0.15	0.18	1

Source: Researchers' computation (2023)

Table 3 depicted the correlation coefficient between the variables and the threshold of correlation coefficient was between +1 and -1. Two variables are positively and highly correlated if their coefficient is between +1 and +0.6 while the correlation is positive and low if the coefficient is between +0.59 and 0. On the other hand, two variables have a negative and high correlation if the coefficient is between -1 and -0.6 but, a negative and low relationship if the correlation coefficient is between -0.59 and 0.

The result in Table 3 revealed that ROA has a weak positive correlation with CUR (0.02), and PCP (0.11) but has a weak negative relationship with RCP (-0.09). This showed that return on asset is expected to increase as the current ratio and payables payment period increase and decrease as the current ratio, and payables payment period decrease. It is also expected that the return on assets will decrease as the receivables collection period increases and vice versa. CUR has a positive correlation with RCP but depicts a negative correlation with PCP. Lastly, a positive correlation exists between RCP and PPP.

Unit Root Test

The unit root test was carried out before analyzing the relationship that exists between the variables of this study because of the problem associated with the possible presence of non-stationary series in regression analysis. To avoid unreliable results, a stationarity test was done, and the result is presented in Table 4, using Levin, Lin & Chu Unit root test.

Table 4: Unit root test

Variables	Levels			Order of integration
	Model 1	Model 2	Model 3	
ROA	-0.99372 (0.1602)	-3.08692 (0.0010)	-4.17310 (0.0000)	1(0)
CUR	-5.62127 (0.0000)	-9.11518 (0.0000)	-3.19583 (0.0007)	1(0)
RCP	-1.0034 (0.1356)	-7.57631 (0.0000)	-3.07041 (0.0011)	1(0)
PPP	-0.81637 (0.2071)	-6.43931 (0.0000)	-0.88529 (0.1880)	1(0)

Source**:** Researcher's Computation, 2023

The unit root test was undertaken based on three options in the following order, Model 1 (intercept), Model II (intercept and trend), and Model III (none). The unit-roots produced results that specified all the variables to be stationary at level 1(0) at a 5% level of significance. In this respect, the null hypothesis has to be rejected, and the stationarity of the series has. After the unit root test established a combination of stationarity of variables at 1(0) across the dependent and independent variables, the econometric theory suggested a regression model for the variables.

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Restatement of Hypotheses

Ho_1: there is no significant relationship between the current ratio and return on asset of consumer goods manufacturing firms in Nigeria

Ho_2: there is no significant relationship between the receivable collection period and return on asset of consumer goods manufacturing firms in Nigeria

Ho_3: there is no significant relationship between the payable payment period and return on asset of consumer goods manufacturing firms in Nigeria

MODEL: $ROA_{it} = \beta_0 + \beta_1 CUR_{it} + \beta_2 RCP_{it} + \beta_3 PPP_{it} + e_{it}$

Regression Analysis

The results in Tables 5 and 6 showed the regression results of the impact of liquidity management on the financial performance of consumer goods manufacturing firms in Nigeria. Since the unit test results revealed that all variables were stationary at a level as presented in Table 4, the study estimated the Fixed effect against the random effect model, using the Husman test to decide on the most appropriate model to use for the study. The Hausman test was used to select the most appropriate model between the fixed effect and random effect.

Table 5: Panel Fixed Effect

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CUR	-0.078023	0.021497	-3.629560	0.0005
RCP	-0.208113	0.076342	-2.726050	0.0079
PPP	0.050102	0.073519	0.681479	0.4976
C	0.124331	0.021166	5.874004	0.0000
R-squared	0.757582			
Adjusted R-squared	0.688320			
F-statistic	10.93786	Durbin-Watson stat		1.578107
Prob(F-statistic)	0.000000			
Period F		0.53470	(4,123)	2.4810
Period Chi-square		1.56432	7	0.4790

Source: Researcher's computation, 2023

The null hypothesis for the Hausman test says the random effect is the most appropriate estimator to give the best consistent result which is acceptable if the probability is greater than 5%. The result of the test gave a probability of 0.4790 (P>0.5) as presented in Table 5. Hence, we concluded that the Random effect model is the best estimator.

Table 6: Panel Random Effect

Variables	Coefficient	Std. Error	t-Statistic	Prob.
CUR	-0.054937	0.022643	-2.42579	0.0172
RCP	-0.257349	0.081217	-3.16867	0.0021
PPP	0.068222	0.076701	0.88945	0.3760
C	0.105836	0.031531	3.35654	0.0011
R-squared	0.655874			
Adjusted R-squared	0.520332			
F-statistic	4.385603	Durbin-Watson stat	1.203966	
Prob(F-statistic)	0.002684			

Source: Researcher's computation, 2023

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Therefore, the Random Effect results in Table 6 were interpreted for the study. The table summarized the results of the regression model estimation showing the coefficients (β) of the independent variables and the intercept as well as their probability values. The constant from the regression results (β_0) has a coefficient of 0.105836 and presents a probability value of 0.0011.

Interpretation of Results

Ho1: there is no significant relationship between the current ratio and the return on assets of consumer goods manufacturing firms in Nigeria.

The results in Table 6 showed that there is a negative and statistically significant relationship between the current ratio and return on assets of listed consumer goods manufacturing firms in Nigeria. This is depicted by P<0.05 and the coefficient and t-statistics values of -0.054927 and -2.42579 respectively. Therefore, the null hypothesis, is rejected and the alternate hypothesis is accepted that there is a significant relationship between the current ratio and the financial performance of the listed. However, as the current ratio is decreasing the return on asset will be increasing.

Ho2: there is no significant relationship between the receivable collection period and return on asset of consumer goods manufacturing firms in Nigeria

Furthermore, the results of the second hypothesis also confirmed a negative and statistically significant relationship between the Receivable collection period and the return on assets of listed consumer goods manufacturing firms in Nigeria. This is observed in the table that P<0.05 and the coefficient and t-statistic values of -0.257349 and -3.16867 respectively. Therefore, the null hypothesis, is also rejected and the alternate hypothesis is accepted that there is a significant relationship between the receivable collection period and the financial performance listed. However, as the receivable collection period is decreasing the return on asset will be increasing.

Ho3: **t**here is no significant relationship between the receivable period and the financial performance of listed manufacturing firms in Nigeria**.**

The result from the test of hypothesis indicated a positive and insignificant relationship between the payables payment period and returns on assets of listed consumer goods manufacturing firms in Nigeria. The result in the table showed that P> 0.05 and the coefficient and t-statistic values of 0.068222 and 0.88945 respectively which is positive. Therefore, the null hypothesis, could not be rejected and it is concluded that there is an insignificant relationship between the receivable period and the financial performance of listed consumer goods manufacturing firms. However, the relationship is found to be positive which means that as the payable payment period is increasing the return on asset will improve.

The F-statistics in the table measured the entire fitness and reliability of the model in the study. It showed the f-statistics for the dependent variable on the independent variable. Therefore, from the table, the results showed that the f-statistic value is 4.385603 at a p-value of 0.002684. this showed the fitness and reliability of the model used for the study. The coefficient of the R^2 value showed that the proportion of variance in the dependent variable that was determined by the set of independent variables. This value indicated the percentage change of the dependent variable brought about by the change in the independent variable. The R-square (R^2) value was 0.655 which indicated about 66% variation in the financial performance of the selected firms that can be explained by liquidity management. The adjusted R^2 showed that there were 48% of other variables not included in this study. Durbin Watson's (DW) result showed autocorrelation in the model. From the table, the DW value was 1.20396 which implied the model was positively autocorrelated.

Discussion

From the test carried out on the first hypothesis, the study found that the current ratio has a negative significant relationship with return on assets as depicted in the table by P<0.05 and the coefficient and t-statistics values of -0.054927 and -2.42579 respectively. This implies that every increase in the current ratio causes a decrease in return on assets. This work lends credence to (Olabisi., Oladejo, Oworu, &

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Abioro, 2020; Olatise, 2020). Ogungbade and Adekoya (2020) discovered that the current ratio has a considerable impact on the profitability of listed manufacturing companies in Nigeria. As a result, their study concluded that liquidity plays a massive role in enhancing the performance of manicuring companies.

The receivable collection period has a significant negative relationship with return on equity as observed in the table P<0.05 and the coefficient and t-statistic values of -0.257349 and -3.16867 respectively. This implies that every increase in the receivable collection period by 1 day causes a decrease in return on equity by approximately 26%. That is, the longer it takes for a firm to collect its debts, will lead to the incidence of bad debts which could reduce the income to shareholders.

It also showed that the receivable collection period has a significant negative effect on the return on assets. This indicated that any increase in the receivables collection period by one day reduces the return on assets. This therefore means if it takes a longer period for a consumer goods firm to collect its trade debts, it would significantly affect the return on assets negatively. Furthermore, this study is in agreement with the study of Yahaya (2020), where it was revealed that the receivable collection period contributed significantly to the profitability of selected consumer goods firms. Moreover, this result showed that although the consumer goods firm has made profits, its level of liquidity does not optimize the use of its assets. This result buttresses the Liquidity-profitability trade-off theory which states that there is an opportunity cost between liquidity and profitability.

The payable payment period has an insignificant positive relationship with return on equity as observed in the table that P>0.05 and the coefficient and t-statistic values of -0.257349 and -3.16867 respectively. This implies that every increase in payable payment period by one day will increase the return on equity by approximately 26%. This means that if a firm has a longer period to pay its trade creditors, it could invest funds available for other profitable investments that can increase the business income and shareholders' value. This result is in line with (Yahaya 2020). The result signified that any increase in payable payment period would increase return on assets but not significant at 5% level of significance. This work conformed to the study of (Ofoegbu, Duru & Onodugo, 2016) but contradicted the study of (Lazaridis & Tryfonidis, 2010; Wuave, Yua & Yua, 2020). This result is in line with the work of (Adamu & Hussaini, 2015; Adebimpe & Ekubiat, 2015; Otekurin, Fagboro, and Femi 2019) and contradicted the studies of Adesina and Olatise (2020). This is because consumer goods firms selected were found to have invested in financial assets that can easily be converted into cash which could be invested in profitable investments and yield more returns for the firm.

5 Conclusions and Recommendations

The results of the hypotheses tested revealed that the current ratio and receivable collection period have negative and significant relationships with return on assets while the payable payment period has a positive and insignificant relationship with return on assets. The study concluded that liquidity management has a substantial effect on the performance of consumer goods manufacturing firms in Nigeria.

In addition, consumer goods manufacturing firms should invest in assets that can easily be converted into cash assets such as money market instruments, marketable securities, and other short-term investments. This will enable them to easily make viable investments that would meet profitability needs while still maintaining an adequate level of liquidity, the debtor's collection period should be shorter than the creditors' payment period. This will enable consumer goods firms to be liquid to pay up their trade creditors when due otherwise, such firms would lose their creditworthiness. The management of a consumer goods firm should maintain adequate cash flow to meet its day-to-day obligations and engage a qualified financial manager who would ensure that optimum cash assets are available to meet short-term obligations. Also, financial managers should always make the right decisions and policies that support the appropriate liquidity management about the optimal level of liquidity.

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Therefore, the study suggested that consumer goods manufacturing firms in Nigeria should comply strictly with policies and strategies that ensure equilibrium between liquidity position and profitability. Such policies should include a proactive process of ensuring that firms have enough cash in hand to meet financial obligations when due. In addition, implementing policies that encourage early payments such as offering discounts for prompt payments and follow up on debtors.

6 Contribution to Future Research

The study offers a significant contribution to future studies on the financial performance of consumer goods manufacturing firms, particularly those listed in Nigeria. By addressing the critical role of liquidity management, the study emphasizes the need for a nuanced understanding of how liquidity impacts the overall financial health of such organizations. The identification of specific challenges faced by consumer goods firms in Nigeria, coupled with the emphasis on integrating liquidity management strategies, paves the way for further studies to delve deeper into the intricacies of these challenges and the effectiveness of comprehensive strategies. The employed *ex-post facto* research design, along with the utilization of panel multiple regression, provided a methodological framework that future studies can adopt for a robust analysis of liquidity's impact on financial performance. The highlighted relationships between liquidity ratios and key financial indicators (Return on Assets) presented avenues for more persevering investigations into the dynamics of liquidity management in consumer goods firms, offering valuable insights for developing targeted policies and strategies in the future.

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