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WORKING CAPITAL MANAGEMENT AND PROFITABILITY OF LISTED CONSUMER GOODS COMPANIES IN NIGERIA

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ABSTRACT

Disrupt daily operations, inability to fulfill long term obligations, lower sales, and shrinking earnings experienced by consumer goods companies have become worrisome to shareholders, business executives, academia and corporate managers. In lieu of this, this study investigated the effect of working capital management on profitability of listed consumer goods firms in Nigeria.

Longitudinal research design was adopted for the study and data were obtained from secondary sources through the annual reports of sampled firms and the factbooks of the Nigerian Exchange Group. Twenty (20) consumer goods firms listed on the Nigerian Exchange Group as at 31st December 2022 formed the population of the study. A sample of ten (10) was selected as sample size using purposive sampling techniques. Data were analyzed using descriptive statistics and panel regression technique.

The findings of the study showed that working capital management structure such as inventory to assets ratio, receivables to assets ratio of the listed consumer goods firms in Nigeria have a negative and significant effect on profitability while cash to assets have negative but insignificant effect on profitability.

The study concluded that when explaining the effect of working capital management structure on the financial performance of listed consumer goods firms in Nigeria, inventory to assets ratio, receivables to assets ratio are the most significant to net profit margin of the listed consumer goods firm.

Keywords: Working capital, inventory, receivable, and net profit margin

1.0 Introduction

Business management is essential to a nation's capital formation, and many people view business as the engine driving both local and global economic growth as a result, effective and efficient business management is essential, business managers struggled to make the most profit possible (Ntui *et al.,* 2014). Working capital management (WCM) is a crucial part of corporate financial choice as it directly influences company's profitability. Working capital represents a company's current assets to the portion of its financial resources that shift from one type to another as it conducts business on a daily basis (Subramanyam, 2020). Maximization of company's current assets, current liabilities and the connections between its many divisions are the goals of working capital management (Tran *et al.,* 2017). Nobanee and Abraham (2015), posited that working capital management improves the efficiency of current assets and current liabilities to maintain enough cash flow to accomplish short-term goals. Baos-Dalei *et al*., (2014), asserted that working capital investment strategy (WCIS) and working capital financing strategy (WCFS) are both essential components of the firm's management's understanding of the connection between working capital management (WCM) and performance. The link between a company's short-term assets and short-term obligations is represented by working capital management.

Effective working capital management aids in achieving short-term liquidity and improves the operating performance of the company goals since businesses strive to maintain the ideal amount of working capital to maximize their value (Deloof, 2018; Izadi & Taaki, 2010). The value of current assets minus the value of current liabilities yields net working capital, which usually calculated by subtracting the current liabilities of a company from its current assets. If the value of current assets is less than the value of current liabilities, net working capital would have a negative value, indicates that there is a working capital deficit (Subramanyam, 2020). Companies prosper when they have access to the best short-term funds (working capital) to carry out daily operations, this increases profitability and ensure that stakeholder needs are satisfied and promotes sustainable growth (Owolabi & Alu, 2020). A well-run company manages its working capital, which is made up of inventories, accounts receivable, accounts payable and cash to control its short-term debt as well as its ongoing operational costs. Cash flow management's manage company's current financial finances in a manner that balances the business's financial success with the risk involved in profitability, working capital strategies result in the firm's optimum performance (Alarussi & Alhaderi, 2018; Lazaridis & Tryfonidis, 2016; Baos-Caballero *et al.,* 2016).

This study will help the shareholders of these consumer goods companies better comprehend the significance of paying close attention to the effective and efficient administration of their equity capital as the study place manager in a better position to develop and put into practice plans and policies that aim to stabilize and manage the various equity capital components, especially given the enormous control that create shareholder value. The analysis would help the management determine how much more liquidity they should have in order to improve their performance; this is very vital because people who pay their creditors on time are viewed as creditworthy with a good reputation which helps their businesses. The study will also contribute to the corpus of information already accessible on equity capital management and business success for scholarly reasons. it is anticipated that the study will be a source of knowledge for students conducting similar studies in the future.

This study focused on working capital management and profitability of listed consumer goods companies in Nigeria. The study covered listed consumer goods companies in Nigeria between 2013 and 2022. However, the choices of the two variables or objective were financial performance as the dependent variable and corporate social responsibility as the independent variable. The only mechanisms considered in the analysis were Cash to Asset Ratio, Receivables to Asset Ratio, and Inventory to Total Assets Ratio. These are the three primary equity capital management techniques, according to the literature, and data on them can be easily obtained from the annual reports of publicly traded consumer goods companies in Nigeria. The study includes ten (10) of the twenty consumer goods firms listed on the Nigerian Exchange Group for the years 2013 to 2022 in order to examine the relationship between equity capital management and business profitability. This study investigates the effect of equity capital on the profitability of consumer goods listed on the Nigerian Exchange Group during a ten-year period (2013-2022). Due to the establishment of International Financial Reporting Standards (IFRS) in Nigeria in 2012, that year was chosen as the base year to maintain policy uniformity. 2022 is the newest year for which statistics are still easily accessible. The annual financial accounts of consumer products companies will be used to gather data, which will then be analyzed.

2.0. Literature Review

Conceptual Review

Working Capital Management

Running a firm requires working capital which this cannot be avoided, mostly in the industrial sector where raw materials are procured on a sporadic basis. As a result, a company's operational success is determined by its equity capital (Olaoye, *et al.*, 2019). Permanent working capital and transient working capital were the two categories used to categorize working capital. Transient working capital known as fluctuating liquid assets refers to working capital that varies in accordance with output volume. Permanent working capital refers to a company's minimal investments in current assets in order to sustain a minimum level of operational activity (Olaoye, *et al.*, 2019). Working capital is the remaining sum after short-term liabilities and current assets have been deducted (Uguru, *et al.*, 2018). According to Osundina (2014), postulated that company's working capital needs to match its activities for it to generate the anticipated level of profits, this means that working capital should be moderately adequate; it shouldn't be excessively large or insufficiently small. In Falope and Ajilore (2009), posited that firm's investment needed in short form to cover receivables, inventories and cash is known as working capital, or net working capital.

Working capital management is a crucial aspect of financial management in all business activities because effective financial management is necessary to ensure the company's long-term profitability and achieve its overall objectives, which include maximizing the owner's wealth (Alvarez, *et al.*, 2021). Working (equity) capital management is critical aspect of company's long-term existence that focuses on holding sufficient current assets to pay for current liabilities in order to prevent adverse effects on daily operations (Owolabi & Alu, 2020). Excessive working capital usually cause company to invest substantially in non-current assets resulting in an over-capitalization situation for which its earnings are insufficient to compensate (Uremadu, *et al.,* 2012), emphasized that both insufficient and excessive capital used for running day to day activities of the firm are detrimental to a company's performance as excessive working capital signifies idle funds with no gain or profit, whilst insufficient working capital results in stagnation of growth. Management is required to monitor and effectively manage the periodic cash flow position using the cash flow statement analysis. Working asset management that is too strict can result into a liquidity crisis, while one that is too loose can lead to lower profitability (Uremadu, *et al.* 2012). The implication is that a company's working asset must be appropriately managed in order to maintain consistent and adequate liquidity and profitability. A stringent credit policy could reduce revenue for a business (Ajayi & Adegoke, 2021). Working asset management has varying levels of importance based on the extent of the company current liability finance is utilized by the larger, fast-growing corporation (Horne & Wachowicz, 2008).

Poor working capital management (WCM), a poor or inefficient management of working asset leads to tie up funds in idle assets and has a negative impact on a company's financial performance and liquidity. (Reddy & Kameswar, 2004). When a business is in financial distress or on the verge of insolvency, its working capital (WC) becomes a focus attention for financial institutions and legal counsel. Financial institutions assess an enterprise's working capital level to determine the extends of additional business loans, whereas legal counsel assesses working capital data to determine whether firm is legally insolvent (Ramiah, *et al.* 2014)

Components of Working Capital Management (WCM)

There are numerous ways to gauge an organization's working capital management (WCM). In the investigation of working capital management (WCM), the current ratio and cash ratio were used in measuring (WCM) in the study of (Williams &

Agnes 2017). The investment of available cash, keeping a particular level of inventories, and important components of working asset management procedures include controlling accounts payable and receivable (Hadley, 2006). Azeez (2015), condensed working capital as asset management's elements to just four categories; cash, receivables, inventory and payables management.

Cash to Asset Ratio

Considering that it positively and statistically significantly affects profitability, cash ratio is a crucial aspect enabling businesses to increase their profitability (Muscetolla, 2015). The cash ratio is computed using money, liquid assets and current liabilities. The cash asset ratio, referred to as the cash ratio, contrasts the sum of short-term obligations with the sum of highly liquid assets, such as cash and marketable securities. This figure is used to evaluate a liquidity position that is, ability to pay down short-term debt, this statistic focuses on cash perspective of how consumer goods companies meet their short-term obligations (Anton & Nucu, 2020).

How to Determine Cash to Asset Ratio? Cash Ratio = Cash and cash equivalent /marketable security current liability. Cash equivalents are any assets that can be quickly converted into cash, these consist of treasury bills, commercial paper, bank deposit assurances and other money market goods cash equivalents are extremely liquid and have excellent credit quality. Examples of current commitments include payables, short-term debt, dividends, notes, and current long-term debt maturities (Acharya, *et al*., 2016). The cash asset ratio is a monetary measure of a business's liquidity. The cash asset ratio provides a monetary indication of a company's liquidity.

Receivables to Asset Ratio

The accounts receivables turnover ratio gauges how efficiently a company handles its line of credit procedure and collects outstanding invoices from clients. This is the period of time that passes between getting goods and services and customers paying off their debts (Acharya, *et al*., 2016). The ratio shows how long it typically takes to collect trade debts and firm that wants to optimize profits must have a low receivable to asset ratio. Businesses who handle their accounts receivable efficiently won't require external borrowing and will be able to support themselves (Wasike, *et al*., 2019). In all other words, efficiency increases with shorter periods of length of the debtor collection period influences how quickly clients pay their bills, and late payments result in bad debts that do negatively impact a company's financial performance and profitability (Singh & Pandey, 2008). The business is thus able to compare the actual collection time to the hypothetical or approved credit period. Receivables to asset management's objective is to make sure that trade debts were paid off before they became uncollectible and cost company money. To avoid placing their liquidity under undue strain and to continue to be successful, businesses must maintain effective receivables to asset management (Adam *et al*., 2017). While debtors entail money and represent an opportunity cost, receivables increase sales by having customers to evaluate the quality of the goods before making purchase (Wasike, *et al*. 2019). This study lingers by stating that an increase in receivables affects net working capital and raises the cost of keeping and managing receivables, which decreases the firm's worth. Thus, the average accounts receivable divided by net sales yields the average accounts receivable to net sales ratio which is typically 365 days (Adamu, 2016).

Inventory to Total Assets Ratio

It measures the efficiency with which a firm employs its resources to produce sales, this ratio determines how well the company's assets are used to circulate (Pham, *et al*., 2020). The inventory to total assets ratio is calculated by dividing net sales by the total or average assets of a firm. A company with a high turnover rate for assets

performs better than competitors with lower ratios. (*corporatefinanceinstitute.com).* Ama *et al*., (2017), asserted that overall asset turnover, assesses how efficiently firm assets are employed overall to generate particular sales quantities the more effectively assets are used to generate sales, the higher the ratio of total asset turnover.

Inventory to Total Assets Ratio

Inventory to Total Assets Ratio = Net Sales/ Average Total Assets. Where: **Net sales** are the amount of revenue generated after deducting sales returns, sales discounts and sales allowances. **Average total asset** is the mean of the total assets at the end of the previous and current fiscal years. An analyst may choose to employ average assets or end-of-period assets.

Profitability

Profitability refers to a company's capacity to maximize profit from all of its operations. Fernandez *et al*., (2020), opined that profitability is the ability to create an excess of revenue over expenses in order to attract and hold investment capital that is it refers to how much money a business or industry makes in profits or other financial gains. Customers consume less working capital for the business the fewer days in debtors' collection period. It enables businesses to be proactive in resolving all payment issues, and to broaden investment opportunities in other profitable projects. (Nguyens *et al*., 2020). The ability of businesses to earn from all of their operations rise as a result lower the payment to creditors, the better the company's solvency, the less it depletes other firms' operating capital and the better the company's reputation. It thereby projects the future profitability of companies (Amer, 2020). Profitability of listed consumer goods firms can be measured using the following metrics: gross profit margin (GPM), operating profit margin (OPM), net profit margin (NPM), return on assets (ROA), return on equity (ROE), and return on capital employed (ROCE).

Net Profit Margin

The net profit margin, or simply net margin, is a percentage of sales that measures how much net income or profit is created which refer to the ratio of a company's or business segment's net profits to revenues (Nguyens *et al*., 2020). Although it can also be expressed as a decimal, net profit margin is often reported as a percentage. It displays the amount of profit generated by a company for every dollar of revenue. A company's net profit margin is among the most important indicators of its financial health in examining growth and declines in its net profit margin, a company can determine whether its current strategies are effective and calculate earnings based on revenues (Muscetolla, 2015). Regardless of size, it is simple to compare the profitability of two or more businesses since companies often refer to net profit margin as a percentage rather than a dollar amount. *(www.investopedia.com)*

Net profit margin

where: Net profit margin= $\frac{R-COGS-E-I-T}{R} * 100 = \frac{Net\ profit}{R} * 100$

R = Revenue

COGS = The cost of goods sold

E = Operating and other expenses

I = Interest

T = Taxes

Theoretical Underpinning

Agency Theory

The fundamental theory in the discipline of theoretical accounting used to explain the disputes together within corporate entity is agency theory (Shleifer & Vishny, 1986). The argument holds that the owners appoint managers to run the business activities on their behalf. It is the theory stated how principals

(owners/shareholders) and agents (managers) interact with one another (Jensen & Mecking, 1976; Jerzemowska, 2006). The applicability of agency theory is linked to the involvement of financial managers in formulating their policies for handling various short-term financial resources, together with the long-term financing choices made to be able to finance various short-term asset kinds. Theoretically, effective working capital management could result in an increase in revenue because assets should theoretically be able to create higher returns after paying off short-term debt, working capital management directly affects a firm's performance, finance managers should aware of the factors that affect working capital management (Aktas & Petmezas, 2015).

If the business decides to distribute the extra cash as a dividend, the owners of the firms, or shareholders, will profit from the increased income because it will be considered as an income stream for them (Filbeck, *et al*., 2017). Relevant stakeholders analyzed discrete data to assess a firm's performance, which was determined by evaluating the efficiency of specific production processes or activities. The theory is relevant to this study since everyone who has an interest in a company, including managers, banks, creditors, family members, and employees, is an agent. The agency hypothesis holds that managers are employed by owners to run the day-to-day operations of a firm enterprise as their agents usually referred to as shareholders of the company.

Empirical Review

Akindele and Ayokunle (2015) examined the connection between working capital management and firm profitability: Evidence from Nigerian quoted companies, adopted secondary data obtained from 25 Nigerian quoted companies for the seven-year period 2005–2011. Multiple Regression analysis was used to analyze the data, and results showed a negative relationship between working capital management (Cash Conversion Cycle) and firm profitability (ROA). This finding supports a proactive approach to working capital management and is consistent with earlier empirical findings.

In a study investigated by Hoang-Lan, *et al*. (2018) on effect of working capital management on financial performance in Vietnam, the study sample consisted of 69 public firms over a three-year period between 2014 and 2016. Their finding revealed that working capital management has a positive impact on the financial performance of the sampled firms.

In a study done by Jacob & Siaw (2019) on the impact of working capital management on profitability of listed manufacturing companies in Ghana (2005-2014). Gross operational profit was used as dependent variable to calculate profitability. Accounts Receivables Period, Accounts Payables Period, Inventory Conversion Period, and Cash Conversion Cycle were employed as independent variables to determine working capital. Secondary data gathered from seven manufacturing companies listed on the Ghana Stock Exchange over a period of ten years were utilized. The study found that account receivables period (ARP) and inventory conversion period (ICP) days had a statistically significant negative impact on the profitability while account payables period (APP) days had insignificantly positive effects on the profitability. Additionally, current ratio, which is used as a cash flow indicator, and firm size, which is determined by the logarithm of sales, are used as control variables. On the other side, the study discovered that firm size (LOS), current ratio and cash conversion cycle (CCC) all significantly improved profitability.

Abigail (2019) used secondary information from ten manufacturing companies' annual financial reports for a period of nine (9) years, from 2009 to 2017. The analysis made use of the panel regression model. To evaluate the effect of working capital management on the profitability of manufacturing companies listed on the Ghana stock

exchange, two performance indicators return on asset and return on equity were used. The return on asset variable of the manufacturing enterprises included in this study was shown to be significantly impacted by the average collection duration, cash conversion cycle, and liquidity independent variables, according to the study. In contrast to liquidity, which has a positive and substantial association with return on asset, the average collection period and cash conversion cycle were found to have a negative and significant relationship with return on asset. Also, it was discovered that return on equity was significantly influenced by the business size, net trading cycle, and average collection duration. While the firm size had a negative and significant association with return on equity, it was discovered that the average collection period and net trading cycle did.

Akinleye and Roseline (2019) evaluated the working capital management and performance of listed manufacturing enterprises in Nigeria. Over a 10-year period, 20 companies were sampled. Panel Granger causality test and static data analytics were used in the study. The results showed that average collection period and average payment have no discernible impact on the sampled firms' return on capital employed.

Olaniyan *et al.,* (2020) investigated the impact of working capital management on profitability in Nigerian manufacturing enterprises. The data for their study was taken from secondary data collected from these firms between 1988-2019. The data were taken from the company review published audit financial report and their finding showed that Cash and Bank Balances (CBB), Trade Payables (TAP), and Trade Receivables (TAR) had a positive and significant impact on the profitability of manufacturing firms in Nigeria. This is a glaring indication that working capital management has a positive and significant impact on company profitability in Nigeria both in the short term and the long term. The study's results support the Keynesian Liquidity Preference Theory.

Michael *et al.,* (2020) looked at the impact of working capital management on return on equity in listed manufacturing firms on the Ghana Stock Exchange (GSE). A panel data set of thirteen (13) GSE listed manufacturing firms for the years 2010 to 2019 was utilized for the study. Their finding revealed that INV has a significant and negative correlation with ROE (r= -0.287 and p0.05) as well as AR and ROE have statistically significant and negative correlation (r= 0.287, p0.05). The data, which were the audited annual financial reports, were accessed from the Ghana Stock Exchange Fact Book and the web portals of the firms. Moreover, there is a statistically significant and adverse correlation between AP and ROE (r= -0.407, p0.05).

The impact of working capital management (WCM) elements on the profitability of steel businesses listed on the Stock Exchange of Vietnam was assessed by Kien, *et al.,* (2020). Data was gathered from organizations' audited financial accounts over a ten-year period, from 2010 to 2019. Out of 26 companies, 20 samples are available for investigation. According to research conducted by steel companies in Vietnam during this time, WCM significantly affects business profitability. Eight factors, including DPO, DIO, DSO, CR, SIZ, and GRO, have an impact on the profitability of steel firms. Only two parameters, CCC and LEV, have an adverse effect on profitability; however, the impact of CCC is minimal.

Andrew's (2020) investigated the influence of working capital management and financial performance of the manufacturing companies listed on the Nairobi Stock Exchange. The study determined that there is a significant correlation between working capital management and financial success by using secondary data from published reports and audited financial reports of listed corporations for the five years from 2012 to 2016. The survey also found that 31.9% of variations in the financial performance of the companies listed on the NSE can be attributed to working capital management.

From 2012 to 2016, Nigerian agricultural and agro-allied enterprises that were publicly traded were questioned by Adegbola, *et al*., (2021). Out of the twenty-three companies in Nigeria, four are agricultural enterprises, data were source from secondary data and 18 companies were retrieved. It was found that working capital management and profitability are related to the Nigerian agriculture and agro-allied industry. The findings indicated negative relationship between profitability and trade receivables collection time.

There are what appears to be gap in the literatures on empirical research on how corporate managers and business leaders evaluate performance from multiple approaches of market and accounting (Arachchi *et al.,* 2017), and economic measures (Jakub *et al.,* 2015) in the relationship with working capital management and working capital strategies, despite growing working capital knowledge (Adam *et al.,* 2017; Altaf & Shah, 2017; Enqvist *et al.,* 2014). These factors together make up the investigation's main issue, requiring the research into the effects of equity capital administration on the profitability of consumer products companies in Nigeria.

The following indicators, along with return on assets, return on equity, and return on capital used, can be used to assess the profitability of publicly traded consumer products companies: gross profit margin (GPM), Operating Profit Margin (OPM), Net Profit Margin (NPM), and Return on Assets (ROA) Return on Capital Employ (ROCE). Return on Asset (ROA) has been used in numerous research to examine the connection between WCM and profitability. However, the profitability in this study will be determined by Net Profit Margin (NPM). In order to have better understanding on how working capital management WCM's three key metrics cash to assets ratio, receivables to assets ratio, and inventory to total assets ratio affect the profitability of listed consumer goods as assessed by NPM, this study set out to investigate the effect of working capital management on the profitability of listed consumer products companies in Nigeria. Contrary to earlier research that mostly focused on consumer goods companies, the sectorial gap was once more filled by taking into account consumer goods companies.

3.0. Data and Methods

This study employed longitudinal research design because data needed were readily available in the financial statement of the listed sampled Nigerian consumer goods companies.

Data were obtained from secondary sources through the annual reports of sampled firms and the factbooks of the Nigerian Exchange Group. Twenty (20) consumer goods firms listed on the Nigerian Exchange Group as at 31st December 2022. This study however deviated from the model by the inclusion of some variables. Expressing the models in functional form it becomes:

NPM= f (CAR, RAR, ITAT)……...3.1

Where:

NPM = Net Profit Margin

CAR = Cash to Assets Ratio

RAR= Receivables to Asset Ratio

ITAT = Inventory to Total Assets Ratio

Transforming this model into a multivariate regression model, it becomes:

NPM= b0 + b1CAR + b2RAR + b3ITAT + u……..3.2

Where:

b0= Intercept of the model

b1= coefficient of Cash to Assets Ratio

b2= coefficient of Receivables to Asset Ratio

b3= coefficient of Inventory to Total Assets Ratio
u= Error Term

Working capital management served as the study's independent variable, and its proxies included the Cash to Assets Ratio (CAR), the Receivables to Assets Ratio (RAR), and the Inventory to Total Assets Ratio (ITAT). The dependent variable is profitability; this was proxies by Net Profit Margin (NPM)

4.0 Data Analysis and Discussion of Findings

Descriptive Statistics

The result of the descriptive statistics is reported in Table 1, and it indicates that on the average basis, the net profit margin of the consumer good firms is 5.7887 with standard deviation of .0557 indicating that the consumer goods firm on Nigeria Exchange group have relatively the same net profit margin because it moderately varies across the firms having coefficient of variation of 9.6 percent. The minimum value is 5.6736 and the maximum value is 5.9084. The data is positively skewed indicating .1604078 and have a kurtosis value of 3.287707 which can be described as a leptokurtic distribution.

From Table 1, cash to asset ratio (CTA) have a mean value of 1.9169 and standard deviation value of .9096023 which depicts a high variation among the consumer goods firms listed on the Nigeria exchange group as established with coefficient variation of 47.4 percent. CTA have a minimum value of .1388 and maximum value is 3.5499. Data for the variable is negatively and highly skewed having a value of -.1934153 and for the kurtosis, the value is 2.49264 indicating that the distributing is normally as it is below the expected threshold of 3. Likewise, inventory asset ratio (IAR) have a mean value of 14.8064 and standard deviation value of 12.190 which depicts a high variation among the consumer goods firms listed on the Nigeria exchange group and this is established by the coefficient of variation showing 82.33 percent. IAR have a minimum value of .3219 and maximum value is 38.3811. Data for the variable is positively and highly skewed having a value of .9747303 and for the kurtosis, the value is 3.142232 indicating that the distributing is abnormal as it is above the expected threshold of 3.

Lastly from Table 1, receivable asset ratio (RAT) have an average value of 10.1546 with standard deviation of 6.505706 which is an indication that RAT highly varies across the firms considering its distance to the mean value and coefficient variation of 64.06 percent. The minimum value is .458 and the maximum value is 30.3. The data is highly and positively skewed showing the value of .9397176 and the kurtosis is leptokurtic having the value of 4.584049.

Table 1: Descriptive Statistics

Variables	NPM	CTA	IAR	RAT
Observations	100	100	100	100
Mean	5.788723	1.916992	14.8064	10.1546
Std. Dev.	.0557964	.9096023	12.19096	6.505706
Coeff. V	.0096388	.4744946	.8233572	.6406659
Min	5.673623	.138892	.3219	.458
Max	5.908491	3.549928	38.3811	30.3
Skewness	.1604078	-.1934153	.9747303	.9397176
Kurtosis	3.287707	2.492645	3.142232	4.584049

Source: Researcher's Computation (2023)

Test of Variables

Correlation Matrix of Dependent and Independent Variables

The correlation co-efficient represents the linear association or relationship between the dependent and explanatory variables. The result in Table 2 showing the relationship between profitability as measured using net profit margin (NPM) and working capital measures. The relationship net profit margin (NPM) and cash to assets ratio (CTA) shows that there is an inverse relationship between the two variables as having coefficient value of -0.2396 and this implies that one-time increase in the current to assets ratio of consumer goods firms will cause a decrease in financial performance by 23.96 percent and the relationship is significant showing p-value of 0.0163. Also from Table 2, explains the relationship between net profit margin (NPM) and inventory to assets ratio (ITA) shows that there is an inverse relationship between the two variables as having coefficient value of -0.3248 and this implies that one-time increase in the inventory to assets ratio of consumer goods firms will cause a decrease in financial performance by 32.48 percent and the relationship is significant showing p-value of 0.0010.

Likewise, the relationship between net profit margin (NPM) and receivables to assets ratio (RTA) shows that there is an inverse relationship between the two variables as having coefficient value of -0.3412 and this implies that one-time increase in the receivables to assets ratio of consumer goods firms will cause a decrease in financial performance by 34.12 percent and the relationship is significant showing p-value of 0.0005. Furthermore, the relationship between the cash to assets and inventory to assets is positive implying that they both move in the same direction when there is an increase inventory to assets ratio, cash to assets will increase by 4.85 percent. Also, cash to assets (CTA) and receivables to assets (RTA) have a positive relationship as they move in the same direction showing a coefficient of 22.17 percent. Table 2, also shows that the relationship between inventory to and audit committee meetings have a coefficient value of -0.0761 implying that an increase in audit committee independence, it will lead to decrease in number of meetings.

Table 2: Correlation Analysis of Study Variables

	OBS	NPM	CTA	ITA	RTA
NPM	100	1.0000			
CTA	100	-0.2396*	1.0000		
		0.0163			
ITA	100	-0.3248*	0.0485	1.0000	
		0.0010	0.6315		
RTA	100	-0.3412*	0.2217*	0.0819	1.0000
		0.0005	0.0266	0.4181	

Source: Researchers' Computation (2023)

Normality Test

The normality of data distribution is an assumption of running a linear model which assures that the p-values for the t-test and F-test will be valid. The assumption merely requires that the residuals be identically and independently distributed. However, from the descriptive statistics the data across some of the variables shows that most of the data obtained for this study are not normally distributed and as such, the normality of residuals will be conducted using Shapiro Wilks test of normality and the result is presented in Table 4. From table 4, the result indicates that for the variables explaining working capital structure and financial performance are abnormally distributed with a p-value of 0.00193 which is lower than the threshold of null hypothesis that the data is normally distributed.

Multicollinearity Test

Multicollinearity test are part of post estimation test to confirm the validity of the assumption of the regression model. In a situation where two or more explanatory variables are highly correlated, meaning that one can linearly predict the other variable with a certain degsree of accuracy, then there is problem of multicollinearity. The Variance Inflation Factor (VIF) value is used to investigate the relationship between the variables themselves to determine their independence. Based on the evidence presented in Table 3, it can be concluded that there is no multi-collinearity problem. This is because the VIF values for all the variables are less than 10 and the tolerance values for all the variables are greater than 0.10 (rule of thumb). Therefore, the study can rely on regression co-efficient to predict the level of impact of independent variables on dependent variables and the outcome of the findings can be considered valid.

Table 3: Tolerance and VIF Value

Variable	VIF	1/VIF
RTA	1.06	0.945780
CTA	1.05	0.949919
ITA	1.01	0.992326
Mean VIF	1.04	

Source: Researchers' Computation (2023)

Test for Heteroscedasticity and Auto-Correlation

The heteroscedasticity test was conducted to check the validity of homoscedasticity assumption that variance in the residuals are constant as the absence of homoscedasticity violate the assumption and may lead to wrong inference. Heteroscedasticity test was conducted using Breusch-Pagan/Cook-Weisberg test and data for the study revealed the absence of heteroskedascity given the probability value of 0.9791 which is higher than 0.05. Data for the study was also tested for auto-correlation using Wooldridge test for autocorrelation in panel data, the result shows the probability of 0.4446 which is insignificant indicating that there is no problem of Auto-correlation.

Table 4: Summary of Post Estimation Test Results

Shapiro -Wilk Test

Null Hypothesis	Statistics	Probability
Distribution of the residuals is normal (P>0.05)	2.889	0.00193

Tolerance and VIF Value

Null Hypothesis	VIF	1/VIF
There is no multicollinearity among the variables (1/VIF >0.10)	1.04	

Breusch-Pagan / Cook-Weisberg test for Heteroscedasticity

Null Hypothesis	Statistics	Probability
Constant variance across the variables residuals (P>0.05)	0.00	0.9791

Wooldridge test for autocorrelation

Null Hypothesis	Statistics	Probability
No first-order autocorrelation (P>0.05)	21.146	0.0013

Hausman Test

Null Hypothesis	Statistics	Probability
Difference in coefficients not systematic (P≤0.05)	1.76	0.6245

Researcher's Computation (2023)

Panel Unit Root Test of the Variables

Panel variables have the tendency of being non-stationary at level which may likely affect the parameter stability and consistency of the model. However, in order to identify the stationary conditions of the variables, the study uses Harris-Tzavalis unit-root test. The null hypothesis assumption of the unit root test is that all panels contain unit roots while the alternate hypothesis implies that some panels are stationary. The results of unit root tests were displayed in Table 5. It shows that all the variables are integrated of order zero that is 1(0). Therefore, it is not necessary to conduct the co-integration test in order to determine the long run relationship among the variables. The panel least square is capable of estimating an efficient model and that is less spurious.

Table 5: Panel Unit Root Test

Variable	**Harris-Tzavalis unit-root test**	
	Statistics	P-value
Net Profit Margin	-5.9288	0.0000
Cash to Assets Ratio	-5.8878	0.0000
Inventory to Asset Ratio	-2.3292	0.0000
Receivable to Assets Ratio	-4.3533	0.0000

Source: Researchers' Computations (2023)

Hausman Specification Test

The result of the Hausman specification test conducted for the study objective is shown in table 4.4. The result to know the model interpretation for the three objectives showed p-value that is insignificant at 5 percent implying that the variation across entities is assumed to be fixed and correlated with the independent variables included in the models. This indicates that the best model for interpretation is fixed effect model.

The regressed result showing how measures of working capital structure in terms of cash to asset, inventory to asset, and receivables to assets affect firm financial performance after meeting the basis for a Best Linear Un-bias Estimate (BLUE) is shown in Table 6. The Hausman specification test conducted produced p-value of 0.6245, which is insignificant at 5%. This implies that the variation across entities is assumed to be systematic with the independent variables included in the model hence the fixed effect model is the most suitable for interpretation. However, the presence of autocorrelation problem as indicated in Table 4 made the regression results to be subjected to a further test as presented in Table 6 where Panel Standard Corrected Error regression was run in order to take care of the problem which made the results of the regression suitable for analysis purpose and interpretation void of bias.

The Panel Standard Corrected Error regression estimates for linear as presented in Table 6 indicate Wald chi2 of 29.94 and probability of the model to be 0.0000 which shows that the model is statistically significant at 5%. The R-Squared indicate 0.2304 and this implies that the independent variables in the model jointly explain 23.04 percent of the variation in the dependent variable with other variables captured by the error term. The implication is that the working capital structure is capable of influencing the financial performance of the listed consumer goods firms in Nigeria and the effect is significant. However, it is indicated that there are other important working capital structure apart from the ones measured that could explain better variation in financial performance of consumer goods firms.

The overall result shows that the measures of working capital structure have negative effect and of significance value on the financial performance of listed consumer good firms in Nigeria exchange group. The individual results for the variables as shown in Table 6 showed that cash to assets (CTA) has a coefficient of -.0009 with

the Z-statistics of -1.81 and p-value of 0.070. This implies that CTA has a negative but insignificant effect on net profit margin (NPM) of consumer goods firms in Nigeria. The implication is that the cash proportion of assets of the firm is less efficient in bringing enough profit after meeting tax obligation and this effect is insignificant. Likewise, from Table 6, inventory to asset (ITA) have a coefficient of -.00250 and z statistics of -3.34 and P-value indicating 0.001. It then means that ITA has a negative and significant effect on net profit margin (NPM) of consumer goods firms in Nigeria. The implication is that the inventory proportion of assets of the firm is not well management making the company less productive and other economic activities in bringing enough profit after meeting tax obligation and this effect is significant.

Lastly from Table 6, receivables to asset (RTA) have a coefficient of -.00190 and z statistics of -3.12 and P-value indicating 0.002. It then means that RTA has a negative and significant effect on net profit margin (NPM) of consumer goods firms in Nigeria. The implication is that the receivables proportion of assets of the firm is not properly managed hereby making it less efficient in achieving balance working capital and bringing enough profit after meeting tax obligation and this effect is significant

The overall results of the study align with the findings of by Ajayi *et al.*, (2021) which examined the impact of working capital management on financial performance of quoted consumer goods manufacturing firms in Nigeria and the findings revealed that a negative relationship exists between Cash Conversion Cycle (CCC) and financial performance. It also aligns with the findings of Abigail (2019) which discovered the average collection period and cash conversion cycle were found to have a negative and significant relationship with return on asset. Likewise, Adegbola *et al.*, (2021) shows that the trade receivables collection period and profitability are negatively related.

However, the findings of the study negate the results of Magdaline (2015) that examined the role of audit committee characteristics in improving firm performance and their findings established that there is a positive relationship between ROA on the current liabilities to total liabilities ratio, Current Asset to Total Asset ratio and the current ratio of manufacturing firms evaluated. The difference in results could be as a result if measurement of financial performance which in this case is measured by net profit margin.

Table 6: Panel Corrected Standard Error

NPM	Coef.	Std. Err.	Z	P>|z|	[95% Conf.	Interval]
CTA	-.0009591	.0005294	-1.81	0.070	-.0019967	.0000785
ITA	-.0025036	.0007501	-3.34	0.001	-.0039738	-.0010334
RTA	-.0019063	.0006119	-3.12	0.002	-.0031057	-.0007069
_Cons	5.856797	.0135289	432.91	0.000	5.830281	5.883314
Number of obs =	100					
Number of groups =	10					
Time periods =	10					
Wald chi2(3) =	29.94	Prob > chi2 =	0.0000			
R-squared =	0.2304					

Researcher's Computation, (2023)

The study concluded that when explaining the effect of working capital management structure on the financial performance of listed consumer goods firms in Nigeria, inventory to assets ratio, receivables to assets ratio are the most significant to net profit margin of the listed consumer goods firm. The findings of the study further uphold the pecking order theory. The implication is that the consumer good firms are yet to get balance working capital management structure to maintain in order to boost the profitability of their companies.

It is evident through the study that working capital structure is useful for assessing a company's management of meeting the day to day obligations while still accruing

economic benefit to the company. Management of consumer goods firms need to reduce the time lag between raw material purchases and client sales of finished items as measured by the cash conversion cycle to have a good profitability.

Based on the findings of the study, the following recommendations are made to ensure that the management of consumer goods firms and regulators of listed companies to ensure there is appropriate structure to improve the financial performance of firms and save them from being insolvent.

1. Management should make sufficient cash available in relation to assets of the company as its inadequacy will ground the operation the company.
2. Regulators should come up with modalities essential for supply of raw material and working capital.
3. Management must maintain good debtor's collection period management in order to avoid putting their resources under significant strain and to remain successful.

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