

# Working Capital Management and Financial Performance: Evidence from Nigeria's Public Listed Manufacturing Companies

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## Abstract

Working capital management is important in corporate finance and considerably impacts organizational profitability. The study investigates how working capital management impacts the performance (specifically in the context of financials) of publicly traded manufacturing companies listed on the Nigeria Stock Exchange (NSE). Data collected for this study was analyzed using Statistical Package for Social Sciences (SPSS) based on the sample of 18 manufacturing companies for five years from 2013 to 2017. Working capital management is important for all organizations as it can considerably impact profitability and financial performance. The linear regression study revealed a notable positive correlation between the Account Payable Period and profitability. An escalation in the duration of accounts payable is associated with increased profitability. The second regression model conclusion indicates that a reduction in the duration (days) to collect sales from consumers is linked to a reduction in the profit since accounts receivable are negatively and insignificantly correlated with profitability. The third discovery in this study revealed an insignificant adverse relationship between the conversion period for inventory and profitability. Manufacturing companies need to turn their inventory into sales to increase profits promptly. This analysis revealed an insignificant inverse correlation between the conversion cycle for cash and profitability.

**Keywords:** non-performing loans, working capital management, financial performance

## 1. Introduction

Working capital management (WCM) has continued to be an important element for organizations in this challenging global economy. Its role is considered important for the organization to sustain and achieve financial performance. WCM is the practice of maintaining the company's financial capacity to cover the disparity between short-term assets and short-term liabilities. It is critical for ensuring a business's liquidity, viability, financial stability, and profitability. WCM is a crucial element of a company's decisions that significantly influence the company's accomplishment (Kasiran et al., 2016). Most businesses, including profit and not-for-profit organizations, usually will require a certain amount of capital to manage the operation, regardless of their size. Some may perceive that working capital is one of the important elements for every business, and it needs to be well-managed to ensure the performance is at par and able to be sustained. Without proper planning, insufficient working capital may harm the business and affect its survival (John & Ezekiel, 2017).

WCM entails supervising the administration of current assets and liabilities (Nyabenge, 2013). Current assets consist of cash, inventories, accounts receivable, marketable securities, debtors, and finished goods. Current liabilities consist of accumulated income, accounts payable, and short-term loans. These components are crucial for a company's strategic value creation and serve as a significant competitive advantage in the business realm (Deloof, 2003). Nigerian industrial enterprises have faced financial difficulties as a result of inadequate management of working capital. Studies have shown that numerous enterprises have failed, with some relocating to neighboring African nations for survival, while those that remain are considering mergers and acquisitions as a solution to liquidity issues (Salawu & Alao, 2014). Some organizations are unable to meet their short-term debt obligations due to a high loan interest rate of 24% imposed by banking institutions. According to the Manufacturing Association of Nigeria, over 820 manufacturing industries have ceased operations in the past nine years under civilian governance,

resulting in the loss of thousands of jobs.

Businesses need working capital to bridge the difference between payments that need to be made and income that is being received. Working capital finance serves as an additional avenue to link the core and helps to continually solve financial needs. Working capital management impacts a firm's financial performance, particularly in the manufacturing sector, as it reflects the health and solvency of a manufacturing enterprise. WCM is a crucial concern for many companies, as finance leaders face challenges pinpointing key working capital factors to minimize risk, adapt to uncertainty, and enhance performance (Lieberman et al., 1999).

Profitability is a suitable indicator of the effectiveness of an investment in generating a profit. It is also regarded as a measure of efficiency that helps organizations achieve higher efficiency. While crucial for measuring efficiency, profitability should not be viewed as the ultimate indicator of efficiency. The correlation between WCM and profitability is crucial as WCM practices substantially impact profitability. These activities impact a company's revenue streams and borrowing costs for short-term financial needs, which may be important to comprehending their relationship. Profitability is a metric that indicates both the efficiency and the successful management of a company's working capital components (Deloof, 2003). A quicker cash conversion cycle can increase a firm's profitability and reduce the need for external borrowing (Wang, 2002). A company's liquidity status significantly impacts its profitability. Profitability and liquidity are distinct concepts that are fundamental goals of a company (Ganesan, 2007).

## 2. Problem Statement

More than 1,000 businesses around the world lose around \$2 billion a year because of ineffective ways of managing the working capital, according to empirical research. Investors, creditors, and the government in Nigeria are increasingly worried about the poor working capital among manufacturing enterprises. Due to inadequate management of working capital, numerous Nigerian industrial enterprises have gone bankrupt. Local tomato manufacturers Dag Motorcycle Ltd. and Erisco Food Limited, which just shut down its \$4 billion (or \$11 million) tomato processing business in Lagos state, are among the companies. In Nigeria, this manufacturing facility puts together Bajaj tricycles and motorcycles. Several other companies in Nigeria have gone bankrupt, forcing their employees to look for jobs elsewhere. These include Kastina Steel Rolling Mill Co. Ltd, Niger Sugar Company Bacita, Golden Guinea Breweries Umuahia, Aba Textile Mills Ltd Aba, Sharada Textile, Kano Textile Company, and Kaduna Textile.

In spite of hopes for an improved business climate in 2016, Nigeria's industrial sector experienced the exact opposite. While reviewing events from the beginning of the 2016 fiscal year, Mrs. Adeosun, the country's minister of finance, pointed out that the manufacturing sector was one of the most hit by the economic downturn (Franklin, 2017). Consistent with what CBN reported, the Manufacturing Purchasing Manager Index (MPI) dropped to 41.9% in June 2016 from 45.8% the month before. Fifty of the nearly 272 enterprises that have gone bankrupt were involved in some kind of manufacturing. A large number of others have relocated to nearby states in order to keep operating. The Manufacturing Association of Nigeria reports that over 180,000 people have lost their jobs as a result of 222 small-scale businesses going out of business (Onuba & Okon, 2016).

Given the above, this study will close the gap by providing new evidence in this context. The new findings will add value to the existing body of literature. The primary objective of this study is to examine how working capital management may affect the financial performance of Nigeria publicly listed manufacturing company as follow:

RO1: To examine the relationship between the account payables period and the return on assets.

RO2: To investigate the relationship of account receivables period on the return on assets.

RO3: To investigate the relationship between the inventory conversion period and the return on assets.

RO4: To examine the relationship between the cash conversion cycle and the return on assets.

## 3. Literature Review

For the past few decades, researchers have focused on the importance of working capital management research. Despite the attention that has been devoted to it, there is still a great deal of doubt surrounding the best constructs that could reflect the appropriate working capital to enhance financial performance. Working capital management (WCM) is a challenge that firms encounter in order to maintain an optimal level of liquidity, allowing them to meet their short-term financial obligations effectively (Aldubhani et al., 2022). Effective working capital management is essential for ensuring the efficient and advantageous operation of a business (Ahmad et al., 2022). According to Padachi (2006), effective management of working capital results in high profitability, which in turn enables

businesses to have the potential to continue existing in the market. As stated by Filbeck and Krueger (2005), it is impossible for any organization to deny its relevance. According to Lyngstadaas and Berg (2016), the ways a company manages its working capital is an essential component of financial management that is practiced. In the process of making decisions on a company's financial management, the management of working capital is a crucial component. The inefficient ways of managing working capital can negatively impact the entity's strength (Singhania & Mehta, 2017). It is also a measure of operating liquidity and defines the short-term condition of a company. The goal of this measure is to maintain an optimal balance among each of the components that make up working capital (Nazir & Afza, 2009). Effective management of the company's working capital is essential to the growth and profitability of the business, both of which are intertwined with liquidity. In the aftermath of this dispute, a few recent studies have demonstrated that the profitability of the company can be improved by decreasing the working capital measures (Deloof, 2003), (Padachi, 2006), and (Baños-Caballero et al., 2014). Furthermore, to enhance the market value, companies often opt for a mechanism of efficient management, specifically regarding the working capital (Deloof, 2003).

"Performance" is a two-pronged concept that includes efficiency and effectiveness. In contrast to efficiency, which is defined as the ratio of output to input, effectiveness refers to the extent to which a corporation achieves its goals. Because globalization has made doing business virtually anywhere possible, investors from all over the globe are increasingly looking at company performance as one of their top priorities (Al-Matari et al., 2014). When a company's performance is well-aligned with the standards set by its management system, it becomes an attractive investment target. It helps strengthen the company's foundation, increase expected performance, and make the most of the firm's assets. According to Ejelly (2004), financial managers place a premium on a company's success. Every business needs to make a reasonable profit to justify its existence and serve as an incentive for customers to visit. Also, according to Deloof (2003), organisations need to manage their working capital effectively and efficiently because they are required to reveal reasonable financial performance. A company's performance is the most significant aspect, yet it's not simple to measure it adequately using financial performance alone. One major flaw in empirical research is that they typically rely too much on profitability metrics, which may not be representative of true financial performance (Santos & Brito, 2012).

Listed manufacturing companies on Bursa Malaysia's Main Board have had their working capital management practices studied by Jakpar et al. (2017). From 2007 through 2011, 164 manufacturing companies were included in the sample. These companies were listed on the Main Board of Bursa Malaysia. Among the favourable correlations they discovered were those between average collection and profitability, between inventory conversion period and profitability, and between business size and profitability. Cash conversion cycle and profitability were shown to have a negligible negative association, but debt and business performance were found to have a strong inverse correlation. Lyngstadaas and Berg (2016) looked at the relationship between working capital management and the profitability of SMEs in Norway. The sample includes 84,300 observations from 2010 to 2013 and 21,075 small and medium-sized enterprises (SMEs) from Norway. They discovered that profitability is negatively correlated with the cash conversion cycle, which means that decreasing the cash conversion cycle will lead to higher profitability. Additionally, the study discovered that profitability was negatively correlated with inventory, accounts receivable, and account payables. They discovered a positive and statistically significant relationship between profitability, company size, sales growth, current assets ratio, GDP growth, and current liabilities ratio when it came to control factors. Debt also has a statistically significant negative effect on profits.

Sharaf and Haddaa (2015) studied how working capital management components are related to firm profitability. 43 industrial enterprises listed on the Amman Stock Exchange in Jordan were included in the study from 2000 to 2012. The regression study results showed a notable inverse correlation between CCC, inventory conversion period, account collection period, and company profitability, suggesting that enhancing the cash conversion cycle leads to improved firm profitability. The study found a positive relationship between the account payables deferral period and ROE, suggesting that enterprises become more profitable when they delay payments to suppliers. Salawu and Alao (2014) studied how working capital management affects the performance of specific manufacturing companies in Nigeria. A panel data sample of 64 non-financial quoted companies in the Nigerian Stock Exchange From 2000 – 2009. The study revealed a strong positive correlation between the average payment duration, average collection period, and business profitability. The cash conversion cycle and inventory turnover in days had a substantial negative relationship with company profitability. The study revealed that while a decrease in the Cash Conversion Cycle (CCC), inventory turnover, and net trading cycle can result in higher returns, the net trading cycle was not statistically significant in its negative relationship with firm profitability. Comparatively, a rise in APP and ACP will result in higher returns and enhance shareholders' wealth.

Ben Ukaegbu (2014) studied the relationship between working capital efficiency and corporate profitability. The study employed a quantitative methodology utilising balanced panel data from four African nations: Egypt, Kenya, Nigeria, and South Africa. Between 2005 and 2009. The study discovered a strong inverse correlation between CCC and profitability among various industrialization typologies. The study identified a correlation between a firm's profitability and its size, which may be influenced by various factors, including the scale of the firm. Makori and Jagongo (2013) examined the correlation between working capital management and the profitability of five construction and manufacturing companies listed on the Nairobi Securities Exchange (NSE) in Kenya from 2003 to 2012. A negative correlation was discovered between the cash conversion cycle and accounts receivable period, as well as profitability. Conversely, a positive correlation was identified between the accounts payable period and inventory conversion period. The study identified a notable impact of the current ratio, company size, leverage, and sales growth on the firm's profitability. Figure 1 displays the conceptual framework for this investigation.

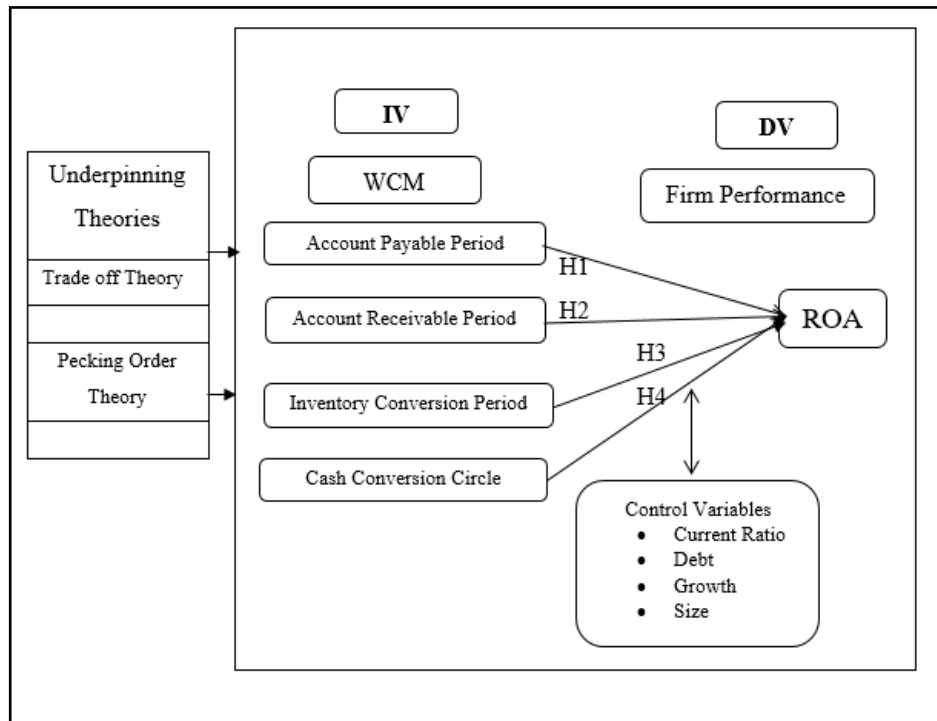


Figure 1. Conceptual Framework

#### 4. Research Methodology

The secondary data obtained from the annual reports and accounts of manufacturing companies that are listed on the Nigerian Stock Exchange (NSE) constitute the research design that was utilised and utilised in this study. A methodical and empirical approach to solving research difficulties can be found through the utilisation of secondary data. Since the researcher believes that working capital choices may be read from audited financial statements of the sample firms, which are confirmed and less susceptible to manipulation, the questionnaire, direct interview, or observation would not be employed. This is because the researcher believes that these statements are more reliable.

For the purpose of this investigation, the data was obtained from the Thomson Data Stream as well as the financial statements that were accessible in the annual reports of the companies that were sampled for the period of five years (2013 to 2017). These time periods were chosen due to the availability of the company's financial reports, and companies that exhibited anomalies were eliminated from the analysis. The population of the study is comprised of all of the manufacturing companies that are listed on the Nigerian Stock Exchange (NSE). This industry was chosen because it makes a significant contribution to the gross domestic product of the nation and represents the third largest contributor, behind the Mining, Quarry, and Agriculture sectors (NBS 2017, 2018). Table 1 categorizes manufacturing enterprises according to the sectors they operate in.

The 45 manufacturing companies that are registered on the Nigeria stock exchange come together to form the

population of this study. This study utilizes a random sampling approach by selecting all listed companies with data accessible as its sample size. As a result, the sample size is comprised of 18 manufacturing companies that have cross-sectional data for five years spanning from 2013 to 2017.

Table 1. Classification of Manufacturing Companies in Nigeria

Sector	Total numbers
Consumer goods	21
Health care	10
Industrial goods	14
Total	45

#### 4.1 Model for Research Variable

Previous studies, such as Napompech (2012), Lazaridis & Tryfonidis (2006), Mathuva (2010), Lyngstadaas & Berg (2016), Gill (2010), Rahman & Nasr (2007), and Dong & Su (2010), have shown that the profitability of a company is a function of four core WCM measurements in addition to other firm characteristics (control variables). This study follows in the footsteps of those studies. The following is the research equation that will be used in this study.

ROA = f (APC, ARP, CCC, ICP, SIZE, DEBT, GROWTH, CURRENT RATIO)

#### 4.2 Reliability and Validity

It is possible to determine the degree to which the data utilized in a study are devoid of any errors or biases by referring to measurement reliability. According to Bougie (2016), it also ensures that the measurements are constant over time and across the numerous elements in the device. This study uses secondary data that has been published and obtained from the Thomason data stream, which is a credible and accurate source of information. The data are subjected to cross-checking in order to guarantee the reliability of the data that was generated.

## 5. Findings

Table 2.

Variables	Mean	Std. Deviation	Minimum	Maximum	Skewness	Kurtosis
NPL	20.09	11.38	.31	58.61	1.73	1.92
LTD	84.32	14.99	43.77	114.70	-.54	-.40
CAR	8.41	2.58	2.46	13.86	-.20	-.64
SIZE	17.65	1.96	13.14	21.55	-.05	-1.03
UR	3.48	.57	2.88	4.61	1.23	-.04
INF	11.01	132.94	-157.89	339.77	1.17	1.31
GDP	-42.96	97.40	-280.51	20.04	-1.62	1.07

Source: Audited Annual Report and result drawn from SPSS

#### 5.1 Demographic Profile

Based on the descriptive statistics presented in Table 3 below, it was found that the ROA has a standard deviation of 51.5% and an average of 11.7%. This indicates that the data points are dispersed across a wider range of means, with a maximum of 26% and a minimum of 24.5%. The range of means is, therefore, expanded. Considering that the average payable time for the APP is 139 days, it can be deduced that the companies, on average, spend more than 139 days to collect their outstanding debt, with a standard variation of 205 days. There is a standard deviation of 54.2 days, and the mean of ACP is 61.6 days. This indicates that it takes the company an average of 62 days to collect all of its debts, with a mean of 61.6 days. For the ICP, it has an average of 121 days; this indicates that, on average, it takes the firm 121 days to convert inventory into sale, with a standard deviation of 77.8 days, and for CCC, it has an average of 43.15 days, this indicates that on average, it takes the firms a total number of 43 days to convert CCC into sales, a standard deviation of 219 days. Table 3 below demonstrates that the typical size of a company has a mean of 7.5% as measured by the log of sale; the mean for debt is 17.3%; the mean for the businesses' current ratio is 11.9%; and the mean for the growth of sales is 999%.

Table 3. Demographic profile

	N	Mean	Std. Deviation	Min	Max
ROA	90	-1.1823	.51458	-2.45	.26
APP	90	139.147	205.674	.0000	1814.793
ACP	90	61.573	54.172	5.680	272.794
ICP	90	120.720	77.879	30.320	415.861
CCC	90	43.146	219.144	-1677.3	505.230
SIZE	90	7.482	0.789	6.165	8.906
DEBT	90	0.173	0.163	0.000	0.550
C R	90	1.192	0.562	0.074	2.594
GROWTH	90	9986	1509	1467	8056
Valid N(listwise)	90				

5.2 Pearson Correlation

One would anticipate a negative relationship between working capital management metrics and profitability if effective management of working capital can boost profitability (Rahma & Nasr, 2007). The Pearson correlation analysis is displayed in Table 4 below. A negative association between profitability and the number of accounts payable days (-0.163) is indicated by Pearson's correlations. Both the study by Lyngstandan et al. (2016) and the one by Oyedele et al. (2017) corroborate this association. Small, profitable businesses may be able to afford to be more lenient with their payment terms since there is a negative correlation between profitability and the amount of days it takes to pay bills. The result reveals a negative correlation between the number of days accounts receivable and profitability ( $r=-0.112$ ), suggesting that a one-day rise in AR days will lead to a decline in profitability. A number of previous research have reached similar negative conclusions, including Jakpar et al. (2017) and Lyngstadaas et al. (2016).

A coefficient of -0.142 indicates a negative relationship between profitability and the number of days' ICP in the correlation study. A shorter time to sell inventory results in higher profitability for a firm, as indicated by the negative link between ICP and profitability. This is in line with what Oyedele et al. (2017) and Sharaf and Hadda (2015) have found. With a coefficient of 0.075, the correlation study between CCC and profitability shows a positive consequence; this indicates that improved profitability is connected with short stock turnover, timely customer payments, and timely supplier payments. According to Dong and Su (2010), the findings are in agreement. Nevertheless, when controlling for other factors, a strong correlation between business size and profitability ( $r=0.060$ ) suggests that larger enterprises report much higher profits than their smaller counterparts. Table 4 reveals that there is a positive association between the current ratio and sales growth ( $r=0.262$  and  $r=0.259$ , respectively), but a negative correlation with firm leverage ( $r=-0.372$ ).

Table 4. Pearson's Correlation

	ROA	APP	ACP	ICP	CCC	Size	Debt	Current Ratio	Growth
ROA	1								
APP	-0.163	1							
ACP	-0.112	0.251*	1						
ICP	-0.142	0.065	0.520**	1					
CCC	0.075	-0.854**	0.196	0.423**	1				
Size	0.060	-0.247*	-0.437**	-0.365**	-0.006	1			
Debt	-0.372**	-0.165	-0.085	0.132	0.181	0.237*	1		
Current Ratio	0.262*	-0.196	0.360**	0.396**	0.414**	-0.359**	-0.448**	1	
Growth	0.259*	-0.199	-0.375**	-0.297**	-0.011	0.797**	0.174	-0.231*	1

\*\* . Correlation is significant at the 0.01 level (2-tailed). \*Correlation is significant at the 0.05 level (2-tailed)

### 5.3 Regression Analysis

Over the course of five years, from 2013 to 2017, this study aims to examine the relationship between working capital management and profitability of eighteen manufacturing enterprises listed on the Nigerian stock exchange. Three industries—Health Care Manufacturing, Consumer Goods, and Industrial Goods—were weighted in the general least square model. The tested hypotheses are listed below.

H1: There is a significant relationship between the Account Payables period and the Return on Assets

H2: There is a significant relationship between the Account Receivables period and the Return on Assets

H3: There is a significant relationship between the Inventory Conversion period and the Return on Assets

H4: There is a significant relationship between the Cash Conversion Cycle and the Return on Assets

The first regression model's result reveals that there is a positive and significant ( $P < 0.10$ ) relationship between Account Payable period and Return on Assets. Please refer to Table 5 below.

Table 5. Regressions of Working Capital Variables (Account Payables period) on Profitability

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
Constant	.440	.870		506	.614
APP	.000	.000	-.182	-1.782	.078
SIZE	-.214	.112	-.0308	-1.912	.059
DEBT	-1.246	.332	-.396	-3.757	.000
C R	.061	.106	.066	.573	.568
GROWTH	1.883E-9	.000	.552	3.686	.000
R2 = 0.319				Durbin Watson=1.908	
AdjustedR2=0.278				F- value =7.859	

This means that a one (1) day increase in the number of days' accounts payable is linked to a higher profit. The result can also be interpreted as when companies surge the quantity of days before companies make payment to their suppliers for goods purchase, the additional time taken by the manufacturing companies can reinvest the money to generate more profit. We also examined the extent to which other variables (control variables) will influence the result of the finding. Bigger firms are more profitable than smaller ones, according to our findings, which show a strong negative association between profitability and the log of sales, which is a measure of a firm's size ( $P < 0.10$ ). Just like the Debt ratio, which was used as a stand-in for firm leverage, profitability was found to have a highly significant negative association with it ( $P < 0.001$ ). This suggests that as a firm's leverage increases, its profitability will likewise decrease. Another rudimentary liquidity metric, the current ratio, has a negative sign and no statistically significant correlation with profitability ( $P > 0.10$ ). There is a strong positive correlation between sales growth and profitability ( $P < 0.001$ ), suggesting that an increase in sales will lead to a rise in profits for the organisation. The adjusted R2 (also called the coefficient of multiple determinations) is 27.8%, which is the percentage of the dependent variable's variance explained jointly by the independent variables. This means that fluctuations in profitability may be explained by the model variables to a degree of 27.8 percent.

Table 6. Regressions of Working Capital Variables (Account Receivables period) on Profitability

	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
Constant	.113	.843		.134	.894
ACP	-.001	.001	-.127	-1.204	.232
SIZE	-.190	.112	-.273	-1.705	.092
DEBT	-1.031	.325	-.327	-3.170	.002
C R	.170	.102	.185	1.663	.100
GROWTH	1.804	.000	.529	3.487	.001
R <sup>2</sup> = 0.305		Durbin Watson=1.953			
AdjustedR <sup>2</sup> =0.264		F- value =7.371			

Table 6 shows that the number of days' accounts gathered has a negative coefficient in the second regression model, which means that it is not substantially connected to profitability ( $P > 0.10$ ). If the number of daily accounts collected declined, the firm's profitability would be significantly affected. You may also look at it this way: the faster clients pay their invoices, the more money you have to restock your inventory. Accordingly, a higher level of sales realization results in higher company profitability. Profitability is significantly inversely related to sales ( $P < 0.10$ ), suggesting that profitability increases as the firm's size grows. An increase in the firm's debt will impact the firm's profitability, as indicated by the significant negative association between the debt ratio and profitability ( $P < 0.005$ ). There is a positive correlation between profitability and the current ratio, albeit not statistically significant ( $P > 0.10$ ). Additionally, there is a strong positive correlation between business growth and profitability ( $P < 0.005$ ). We get a corrected R<sup>2</sup> of 26.4%. This means that the model may explain changes in profitability to the tune of 26.4%.

According to Table 7 below, the third regression model has a negative and non-significant coefficient of inventory conversion period ( $P > 0.10$ ). This means that a company's profitability will be affected if it takes too long to turn its inventory into sales. The profitability of a corporation is positively correlated with its size, suggesting that larger firms tend to be more profitable ( $P < 0.10$ ). The firm's profitability is impacted by a rise in leverage, as indicated by the negative and statistically significant association between the debt ratio and profitability ( $P < 0.05$ ). The firm's profitability is positively and significantly correlated with the current ratio ( $P < 0.10$ ), and with the growth of sales ( $P < 0.005$ ). Refined, the R<sup>2</sup> value is 26.1%. This means that a fluctuation in profitability of 26.1% can be explained by the model.

Table 7. Regressions of Working Capital Variables (Inventory Conversion period) on Profitability

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
Constant	.061	.838		.073	.942
ICP	-.001	.001	-.124	-1.098	.275
SIZE	-.186	.112	-.267	-1.670	.099
DEBT	-.920	.355	-.292	-2.593	.011
C R	.190	.110	-.207	1.727	.088
GROWTH	1.821	.000	.534	3.521	.001
R <sup>2</sup> = 0.303		Durbin Watson=1.895			
AdjustedR <sup>2</sup> =0.261		F- value =7.301			

The final regression model shows a non-significant negative correlation between the cash conversion cycle and business performance with a p-value greater than 0.10. This implies that an increase in the cash conversion cycle will impact firm profitability. The inverse correlation suggests that reducing the cash conversion cycle leads to increased profits for enterprises; a lower CCC is associated with improved profitability for the firm (Vural et al., 2012).



business size has an insignificant negative correlation with business performance ( $P < 0.10$ ), whereas the debt ratio has a substantial negative correlation with profitability ( $P < 0.005$ ), suggesting that an increase in firm debt will impact firm performance. The current ratio shows a positive correlation with profitability, but it is not statistically significant ( $P > 0.10$ ). The sales growth has a strong positive correlation with company performance ( $P < 0.001$ ), meaning that sales growth changes will impact the firm's profitability. The R-squared value has been modified to 26.2%. This means that the model can account for 26.2% of the variation in profitability, as seen in Table 8 below.

Table 8. Regressions of Working Capital Variables (Cash Conversion Cycle) on Profitability

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
Constant	.144	.854		.169	.866
CCC	-.000	.000	-.126	-1.111	.270
SIZE	-.184	.111	-.265	-1.658	.101
DEBT	-1.261	.360	-.400	-3.502	.001
C R	-.058	.120	-.064	.486	.628
GROWTH	1.899E-9	.000	.556	3.661	.000
R <sup>2</sup> = 0.303		Durbin Watson=1.929			
AdjustedR <sup>2</sup> =0.262		F- value =7.310			

## 6. Discussion

Previous studies have predicted positive and negative relationships between the working capital components CCC, APP, ACP INP, and profitability, such as ROA, ROE, and ROI. However, here, we evaluate the study's assumptions and discover a positive and statistically significant relationship between APP and profits. An increase in the number of days accounts payable by one day is linked to higher profitability, indicating a positive association. This outcome is quite significant and economically rational since, as a company delays its payments, it increases its working capital levels, which in turn can boost profitability.

This aligns with prior research conducted by Mathura (2010), Gills et al. (2010), Makori & Jagongo (2013), and Rahema et al. (2010). The null hypothesis is rejected in favor of the alternative hypothesis with a significance level of 0.078, indicating a positive correlation between APP and profitability. The lack of a significant relationship between ACP and Profitability may indicate that shorter customer payment times result in increased cash flow for inventory replenishment. Therefore, increased sales directly correlate with increased business profitability. While short ACP is useful for illustrating the financial performance of listed manufacturing companies in Nigeria, it is not a crucial criterion to prioritize when aiming to enhance profitability. The negative coefficient of ACP indicates that a rise in accounts receivable days is linked to a decline in profitability. Therefore, the result implies that managers of manufacturing companies in Nigeria can increase profitability by reducing the credit period granted to customers. The outcome aligns with the findings of Deloof (2003), Padachi (2006), Lyngstadaas & Berg (2016), Dong & Su (2010), Mathuva (2010), and Jakpars et al. (2017). Hence, the null hypothesis is affirmed.

The third model examining the correlation between ICP and profitability indicates a negative relationship, suggesting that maintaining high inventory levels can lower supply costs and shield the company from price fluctuations due to unfavorable macroeconomic conditions, as noted by (Blinder & Maccirri, 1991). Furthermore, if a company delays converting its inventory into sales, it will negatively impact its profitability. Maintaining a high inventory level might be seen as a way to reduce potential causes of issues. Therefore, H3 is not accepted.

The inverse correlation between the Cash Conversion Cycle (CCC) and profitability aligns with the idea that reducing the CCC leads to increased organizational profits. A lower CCC is associated with higher profitability for the firm (Vural et al., 2012). Most countries show a negative correlation between the CCC and corporate performance. (Chang, 2018). Shin and Soenen (1998) suggest that the inverse correlation between the cash conversion cycle and profitability may be attributed to market shares or market power. This means that a shorter cash conversion cycle could result from strong bargaining power held by suppliers or customers, leading to increased profitability from market dominance. Reducing investments in existing assets may enhance corporate performance. Additionally, this guarantees that liquid assets are not retained for an extended period in the company, allowing for

increased profit generation (Mathuva, 2010). The null hypothesis was accepted, whereas the alternative hypothesis was rejected.

## 7. Conclusion

This study examined how working capital management impacts the financial performance of industrial companies listed on the Nigeria stock exchange. The data were analyzed using descriptive statistics, Pearson correlation, and regression analysis from 2013 to 2017. Many manufacturing enterprises in Nigeria have a significant amount of money tied up in working capital. The management of working capital is anticipated to have a substantial impact on the profitability of manufacturing enterprises in Nigeria. The new strategy in Nigeria aligns with previous studies conducted in other nations. There was an anticipation of varied outcomes in this study due to the government's new policies impacting all sectors of the economy, particularly the manufacturing industry. The policies included restrictions on importing raw materials and government intervention in determining market prices in the forex market. The regression models (1) to (4) indicate that managers of manufacturing enterprises in Nigeria can enhance company profitability by decreasing the days of accounts receivable and inventories.

Although this study has made a valuable contribution, it is nevertheless constrained by significant constraints. The study solely focused on Return on Assets as a metric for financial performance, neglecting other potential indicators like Net Operating Income (NOP), Gross Operating Income (GOI), Return on Equity (ROE), and Return on Capital Employed (ROCE), among others. This study is limited by a small sample size, as only 18 companies out of the possible 48 samples were selected due to inadequate data in the companies' annual reports. The limited sample size may not yield a comprehensive and precise outcome for the study.

Thus, it can be concluded that working capital management is important to ensure its financial performance is improved. Managers play a crucial role in improving the financial situation of organizations by effectively managing working capital; despite that, some might consider it to be a challenge in the dynamics economy (Ahmad et al., 2022). Managers must possess the knowledge and skills to effectively handle working capital, as it plays a crucial role in determining the profitability and performance of firms (Aldubhani et al., 2022). Managers need to be able to analyse its working capital efficiently and subsequently make a decision either retaining additional cash or utilising it to expand their business, taking into account their debt obligations and the specified time frame.

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