

DOES WORKING CAPITAL MANAGEMENT AFFECT THE PROFITABILITY OF CONSUMER GOODS MANUFACTURING FIRMS IN NIGERIA?

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ABSTRACT

The study examined the effect of working capital management on profitability of consumer goods manufacturing firms in Nigeria between the periods 2009 to 2018. The study adopted *ex-post-facto* design to generate data from the audited financial statements of the selected companies. The population of the study comprised 24 listed consumer goods manufacturing companies, out of which 10 were purposively selected based on the availability of data. The surrogates for independent variables were Account Payable Period (APP), Account Receivable Period (ARP), Inventory Turnover Period (INVTP), Cash Conversion Cycle (CCC) and Sales Growth (SG) as a control variable while the proxy for profitability was Return on Asset (ROA). Descriptive and inferential statistics coupled with multiple regressions were adopted to analyze the data. The Random Effects Generalized Least Square showed that ARP, INVTP, CCC had a negative and significant relationship with ROA while APP, SG had a positive and insignificant relationship with ROA. The study concluded that timely collection of debts and shorter inventory turnover period with cash conversion cycle enhance profitability of consumer goods manufacturing companies. Hence, the study suggested that the management of the companies should implement efficient working capital management for improved profitability.

Keywords: Return on asset, Account Payable Period, Account receivable period; inventory turnover period, cash conversion cycle, Sale Growth

INTRODUCTION

Working capital management is a purposeful area of financial management that places emphasis on efficient combination of short-term assets and liabilities to business finance (Adegboyega, Olabisi, Kajola & Asaolu, 2019). The correct mixture of short term assets and liability provides sound financial health and strength to business ac-

tivities. Smith, (1980) opines that the proportion of investment in working capital in every organisation is usually higher than investment in other assets hence the need for an efficient management of working capital to guarantee a smooth running of business operation. Krueger, (2002) argues that excessive current assets over current liability reduces profitability as idle liquid fund increases interest expense so also an inade-

quate working capital causes stock outs leading to inability to meet up with customers' requests.

Various empirical studies such as Shin and Soenen, (1998); Deloof, (2003); Fildbeck and Krueger, (2005); Falope, (2009); Jinadu, (2010) have examined the connection between working capital and business performance in emerging countries. The rationale for these collective research efforts in this area has to do with the implications of either efficient or inefficient working capital on shareholder's wealth. Some of these studies concern bigger firms in developing economy that failed to note that working capital necessities vary across businesses such as business nature, size of operation, cycle of production, policy as regard credit, and accessibility to raw materials (Ghosh & Maj, 2004).

Jinadu, (2009) affirmed that the existence of much literature on the significance of working capital is inconsequential on business survival as, many companies in developing countries increasingly collapse. In addition, many investments that are promising with attractive rate of returns have failed because of poor working capital management due to inability to meet financial obligations to creditors as at when due. Several companies in developing countries, especially in Nigeria, have gone into liquidation. Many Nigerian workers have been thrown into the labour market due to inattentiveness to working capital management. The problem is compounded by bottleneck mounted by the Nigerian Capital market as a result of different business regulations that is either difficult or impossible to meet by helpless companies.

Filbeck and Krueger, (2005) affirm that

business success is contingent on effective blend of working capital component. Afza and Nazir, (2009) alluded that the attainment of an optimum level of working capital, requires continuous monitoring of activities.

Various studies such as Shah and Sana, (2006); Raheman and Masr, (2007) ignored the fixed effect of firms as they all have their singular features and also disregarded the peculiarity of each sector concerning working capital management. The strong motivation for this study is inconsistent findings on the cogency of effect of working capital management on the performance of listed manufacturing companies in developing countries with a special reference to Nigerian consumer goods manufacturing firms.

The study on whether or not working capital management influences profitability has attracted great attention from both academic and financial practitioners for many years and is still ongoing. This is evident in the quantum of studies that have been undertaken in this area over the years. In fact, series of previous studies have shown inconsistent results as to the relationship that exists between working capital management and profitability of firms in across different industries as well as different environments. Hence, this study seeks to examine if working capital management influence the profitability of Nigerian consumer goods manufacturing firms. The specific objectives of the study are to:

- i. assess the effect of account payable period on profitability of listed consumer goods manufacturing firms in Nigeria;
- ii. examine the influence of accounts receivables period on profitability of listed consumer goods manufacturing firms in Nigeria;

- iii. investigate the effect of inventory turnover period on profitability of listed consumer goods manufacturing firms in Nigerian; and
- iv. evaluate the relationship that exist between cash conversion cycle period and profitability of listed consumer goods manufacturing firms in Nigeria.

The succeeding sections of the paper contained conceptual and empirical review. The third part dealt with methodology adopted. The fourth section presented the results of the study while the fifth part discussed the findings, concluded the study, made recommendations and offered contributions to knowledge based on the conclusion of the study.

LITERATURE REVIEW

Conceptual review

Falope and Ajilore, (2009) described working capital as the firm's investment in short term assets. Working capital management concerns the process of maintaining the optimum levels of the individual components of the working capital (Loneux, 2004). The major objective of working capital management is the efficient combination of firm's current assets and current liabilities in a way that a satisfactory level is maintained (Dong & SU, 2010). Hence, working capital management refers to actions taken by managers to strike a balance between liquidity and profitability while conducting a day-to-day operation of a business.

Account payable management deals with maximization of period to meet the commitment of the supplier. The risk of maximizing account payables by having a longer credit period from the supplier is that firms may not get a discount from their vendors or bad quality products or service may be

received from suppliers, which can ruin the business relationship between suppliers and buyers (Limin, 2012). If payment period is increased, it may result in loss of reliable suppliers. Therefore, firms should keep better relations with their suppliers and try to keep optimal working capital (Jayarathnea, 2014).

Manufacturing firms engage in cash and credit transactions to increase sales (Adegboyega, Olabisi, Kajola & Asaolu, 2019). Management of account receivables entails the minimization of collection period for sundry debtors to fulfill commitment to creditors. The process of managing accounts receivables is vital to the survival and profitability of manufacturing firm because it is directly linked to credit sales (Jayarathnea, 2014). Account receivables management involves adopting proper credit policy that encourages debtors to meet up with the credit period. Proper credit policy is also expected to attract customers and boost sales. However, such policies have a positive impact on profitability as it affects the firm's cash flows. Therefore, financial manager needs to strike a balance between boosting sales and securing necessary cash flows (Kamal, Rana & Ahmed, 2013).

Inventory turnover period indicates the length of time it takes goods to be manufactured and sold, as low frequency circulation of inventory means relatively high investment in inventory. When a company maintains inventory more than the required level, it results into tying down financial resources in non-productive activities (Asefi, Amirali, & Ghalebi, 2013). Bhattacharya (2003) posits that the purpose of inventory management is to minimize these costs without causing disruption to production activities. Therefore, Bhattacharya (2003) concluded that firm

should maintain an ideal level of inventory at all time to prevent stock out or production stoppage which can result in loss of sale and consequently impair profit. In the same vein company should not keep excess inventories which may increase holding cost of inventory.

Elizalde, (2003) asserts that cash conversion cycle is an essential tool used to analyze and establish which area of business activities does a business needs cash to operate and where it will be sourced and how the firm will attain a better position to refund the negotiated funds as at when due. Dong and Su, (2010) reflect that cash conversion cycle is an inclusive effort to check the effectiveness of working capital management. Richards and Laughlin, (1980) formulate a working capital cycle strategy that considers the period between the settlement of credit purchases (cash out-flow) for goods supplied to the business and the period cash is received for credit sales (cash in-flow) for goods sold on credit to trade debtors.

According to Eljelly, (2004) profitability is described as rewards to business owners for parting with their funds and it is excess of revenue over expenses which attracts and holds capital invested in businesses. There are different measures of profitability but for the purpose of this study Return on Assets (ROA) was used to measure profitability. The ROA is an overall index of profitability that measures returns to firm's assets and business profitability is galvanized when there is an improvement in firm's value (Gitman, 2016). ROA indicates administrative proficiency and how the firm's managers are able to translate the organisation's assets into profitability (Falope & Ajilore, 2009). The ROE indicates the rate of return on the owners' equity adopted by

the firm (Padachi, 2005).

Theoretical Review

The theory of working capital management enunciates the proper manner in which working capital should be managed to result in business liquidity, solvency, efficiency, profitability that maximize shareholder wealth arising from fittingly handling of working capital (Brigham, Gapenski, Ehrhardt, 1999, Gitman, 1997).

Liquidity is affected by cash, credit, inventory, accounts payable and cash that form part of the overall cash flow of a business (Maness, 1994). A business that carelessly reduces its levels of cash by holding excess inventories or advancing unguided credit facilities to debtors risks its liquidity (Gitman, 1997, Dierks & Patel, 1997, Peel & Wilson, 1996). Uncontrolled decreasing liquidity, can lead to insolvency and bankruptcy when the business's obligations exceed its assets (Asch, Kaye, 1989, Madura, Veit, 1988, Altman, 1983). The theory of Liquidity-Profitability Trade-Off submits that policy on working capital investment that maximizes profitability reduces liquidity and vice versa.

Eljelly, (2004); Nasir and Afza, (2007) submitted that profitability will improve if lesser funds are idle through the procurement of excess current assets and business will be adversely affected if there is cash shortage and stock out. For a firm to survive, it has to be adequately liquid. This implies that a business has to sustain massive investment in current asset. This enables the firm to pay a short term obligation, ensure continuous production and meet customers' demands. Otherwise, profitability will be affected if a large amount of funds is used to buy non-current assets (Egbide & Enyi, 2008).

Empirical Review

Shin and Soenen, (1998) adopted a sample of 58,985 firms listed in the United State Stock Exchange during the period covering 1975-1994 in order to investigate the relationship between Cash Conversion Cycle and the profitability of firms. They discovered a significant negative relationship between the lengths of the firm's cash conversion cycle and its profitability. The result suggested that working capital management has a significant impact on the profitability of the listed firms.

Lizaridis and Tryfonidis, (2006) investigated the relationship between working capital management and corporate profitability listed companies in the Athens Stock Exchange. The study covered the period of 2001-2004. The result of the study using regression analysis revealed that there was a statistical significant negative relationship between profitability, measured with gross operating profit, and the cash conversion cycle. The study suggested that the managers could create value for shareholders by properly handling cash conversion cycle and keeping optimal level of each working capital component.

Chatraji (2010) investigated the impact of working capital management on profitability of listed companies on the London stock exchange between the periods of 2006-2008. The results of the study showed a negative relationship between working capital management and profitability. This implied that an increase in cash transformational cycle lead to a reduction in profitability level.

Grace and Olang (2017) examined the effect of working capital on dividend pay-out by firms listed on the Nairobi Securities Ex-

change, Kenya. The study adopted a purposive sampling to select 30 firms which consistently paid dividends from the year 2011 to 2015. The result of the study revealed that cash management, inventory management and account receivable have a positive effect on profitability.

Falope and Ajilore (2009) investigated the effect of working capital management on profitability performance of Nigerian quoted non-financial firms between periods of 1996-2005. They made use of a panel data collected from a sample of 55 firms. The results of the study revealed a negative relationship between net operating income and the average collection period, inventory turnover in days, average payment period and cash conversion cycle. They concluded that shareholders' value can be enhanced if managers decide to manage the firm's working capital in an efficient manner that reduces the number of days' account receivable and inventories to a reasonable period.

Olabisi, Oladeo, Adegoke and Abioro (2019) investigated credit management policy and firms' profitability: Evidence from Infant manufacturing firms in Southwestern Nigeria between the years 2009 to 2018. The results of their study showed a positive and insignificant relationship between current ratio, creditors' payment period and profitability of selected infant manufacturing firms'. However negative and significant relationships were found between debtors' collection period and profitability of the selected firms. The study concluded that a good debtor collection strategy should be formulated and implemented so as to have constant access to cash and be able to meet up with short term obligations.

Consequent on relatively few empirical stud-

ies on the impact of working capital management on the profitability of firms in consumer goods manufacturing sector in Nigeria that prompts this study to examine if working capital management influence the profitability of consumer goods firms in Nigerian so as to identify those components of working capital that have significant impact on the profitability of those firms and thereby thinning the existing gap in literature.

METHODOLOGY

The study adopted an *ex-post facto* data from the financial statement of Nigerian listed consumer goods manufacturing firms from 2009 to 2018. The data for analysis were extracted from the audited financial statements of the sampled manufacturing companies without being manipulated or controlled. The population of the study comprised 24 consumer goods manufacturing firms listed on the Nigerian stock exchange as at 2018. Audited financial statements were reliable as auditors had certified the financial statements.

The study used judgmental sampling techniques to select the sample based on the following criteria:

- i. Companies that were listed on the Nigerian Stock Exchange (NSE) during the 2009 – 2018 period.
- ii. Companies that completed the financial statements for the period under review (2009-2018).
- iii. Companies that were in operation during the period under investigation (2009 -2018)

Ten (10) consumer goods manufacturing firms fell within the criteria set out and relevant data were obtained from their annual audited accounts over a period of 10 years

(2009-2018).

The study used descriptive statistics which highlights measures of central tendency and dispersion such as the mean and standard deviation. The choice of descriptive statistics for the analysis of data in this study was as a result of its great advantage, as it makes a mass of research material easier to read, by reducing a large set of data into a few statistics. Multiple regression models was also used as a statistical technique to analysis the effect of working capital management on profitability of selected consumer goods manufacturing firms.

Data and Model Specification

The panel data analysis for the multiple regression models that explained the *A-Priori* relationship between working capital management and profitability of selected Nigerian listed consumer goods firms is specified in equation 3.1 and 3.2: The variables of interest in the study were dependent variable (profitability) and independent (working capital management). The dependent variable was measured with Return on Asset (ROA) while the surrogates for independent variables are Account Payable Period (APP), Account Receivable Period (ARP), Inventory Turnover Period (INVTP), Cash Conversion Cycle (CCC) and Sales Growth (SG) as a control variable.

The model used for the study is therefore, stated as follows:

$$ROA=f(APP,ARP,INVTP,CCC,SG)\dots\dots 3.1$$

Where:

ROA = Return on Asset (Naira)

APP = Accounting Payables Period (number of days)

ARP = Account Receivable Period (number of days)

INVP = Inventory Turnover Period

(number of days)
 CCC = Cash Conversion Cycle (number of days)
 SG = Sales Growth (as a control variable) (Naira)

ϵ_i = error term
 β_0 = Regression Constant
 $i = 1, \dots, N$ implies number of companies
 $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ Represents Co-efficient of independent variables

$$ROA_{it} = \beta_0 + \beta_1(AP_{it}) + \beta_2(AR_{it}) + \beta_3(INVT_{it}) + \beta_4(CCC_{it}) + \beta_5(SG_{it}) + \epsilon_{it}$$

Research Hypotheses

The following hypotheses were formulated and empirically tested:

- H₀₁: There is no significant effect of account payable period on profitability of listed consumer goods manufacturing firms in Nigeria
- H₀₂: There is no significant influence of accounts receivables period on profitability of listed consumer goods manufacturing firms in Nigeria
- H₀₃: There is significant effect of inventory

turnover period on profitability of listed consumer goods manufacturing firms in Nigerian

- H₀₄: There is significant relationship between cash conversion cycle period and profitability of listed consumer goods manufacturing firms in Nigeria

Variable Descriptions and Measurements

The table presents the manner variable adopted in the study were described and measured.

Table 1: Measurement and Description of Variables

Variable	Abbreviation	Type	A-priori expectation	Measurement
Return on Asset	ROA	Dependent		$\frac{\text{Profit after tax}}{\text{Total assets}} \times 100\%$
Account payable Period	APP	Independent	Positive	$\frac{\text{Trade creditors}}{\text{Credit purchases}} \times 365 \text{ days}$
Account Receivable Period	ARP	Independent	Negative	$\frac{\text{Trade debtors}}{\text{Credit sales}} \times 365 \text{ days}$
Inventory Turnover period	INVTP	Independent	Negative	$\frac{\text{Average Inventory}}{\text{Cost of goods sold}} \times 365 \text{ days}$
Cash Conversion Cycle	CCC	Independent	Negative	Number of days inventory turnover + number of account receivables in days - numbers of days account payables
Sale Growth	SG	Control	Positive	$(\text{Turnover} - \text{Turnover}_{-1}) / \text{Turnover}_{-1}$

Source: Various Empirical Studies (2019)

EMPERICAL RESULTS AND DISCUSSION

Under this section, the data gathered were analyzed adopting descriptive, multiple regression analyses.

Descriptive Statistics

Table 2 indicated the summarized statistics of all the variables under the study. The table showed that, on the average, during the

period under the study, Return on Asset and Sales Growth is 18.6% and 42% while Account payable period, Account Receivable Period, Inventory Turnover Period and Cash Collection Cycle have approximately a mean value of 4, 1, 2 and 6 days respectively. Their respective minimum and maximum values are equally shown with Account Payable Period having the highest period at 9.3 days with the lowest being sales growth at -1.6

days. The implication of this is that debtors for goods are expected to make payment for goods bought on credit within the time frame of 9 days to be able to maintain good credit worthiness with supplier. However, it

is a good business strategy for a debtor to delay payment for goods bought on credit till the maximum days (9 days) so as to be liquid enough to meet up with short term obligations.

Table 2: Descriptive statistics

	ROA	APP	ARP	INVTP	CCC	SG
Mean	0.186499	3.674500	0.083100	0.202900	0.588200	0.420074
Median	0.153965	3.500000	0.070000	0.190000	0.600000	0.343380
Maximum	0.585160	9.300000	0.380000	0.290000	0.820000	2.970340
Minimum	-0.010440	1.200000	-0.260000	0.030000	0.190000	-1.553720
Std. Dev.	0.128034	1.338582	0.103881	0.055127	0.142073	0.459791
Skewness	0.948889	2.134355	-0.214587	0.044423	-0.853056	1.591054
Kurtosis	3.679336	9.220254	4.607374	2.720927	3.838348	15.14902
Jarque-Bera Probability	16.92941	237.1394	11.53268	0.357399	15.05686	657.1851
Observations	100	100	100	100	100	100

Source: Authors' computation with the aid of E-view software, Version 9.0

The standard deviation values indicated the dispersion of the data series. The higher the value is also the deviation of the series from observed mean and the lower the value, the lower the deviation of the series from the mean. The variable with a higher deviation from the mean is account payable period 1.2 days, and this further explains its variation over the years. The Jarque-Bera test revealed that all the variables except inventory conversion period are significant at 5% level, indicating non-normality of the variables. The tables indicated that Account payable period, inventory turnover period and sales growth are positively skewed while account receivable and cash conversion cycle are negatively skewed. The kurto-

sis indicated that all the variables except inventory conversion cycle are leptokurtic indicating evidence of a peaked curve than normal distribution.

Stationarity Test

Table 3 depicted the stationarity test (using Levin, Lin & Chu Unit Root Test) of the criterion and response variables adopted in the study. All the series were stationary although under different unit root model assumptions. For instance, Account Receivable Period and Return on Assets were stationary when Intercept and trend ('a') were considered while the remaining variables were stationary at intercept ('b').

Table 3: Stationary Test

Variables	Levin, Lin and Chu unit root test		
	Level	First difference	I(d)
APP	-4.1060 ^b (0.0000)	-	I(0)
ARP	-3.9773 ^a (0.0000)	-	I(0)
INVTP	-4.5422 ^b (0.0000)	-	I(0)
CCC	-2.7562 ^b (0.0029)	-	I(0)
SG	-3.0644 ^b (0.0011)	-	I(0)
ROA	-4.7004 ^a (0.0000)	-	I(0)

Source: Authors' computation with the aid of E-view software, Version 9.0

Regression Results

Table 5 presented the regression results of both fixed effect and random effect models. In line with the work of Muhoro (2013), Abu-Bakr *et al.*, (2018), the study conducted multiple regression analysis adopting Fixed

Effects Least Squares (FELS) and Random Effects Generalized Least Square (REGLS) approaches using Hausmans test to determine the most appropriate technique for the study.

Table 5: Regression Results

Variables	Fixed Effect		Random Effect	
	Coefficient	t-Statistic	Coefficient	t-Statistic
APP	0.004456 (0.6458)	0.461181	0.004370 (0.6393)	0.470177
ARP	-0.305754 (0.0228)	-2.318207	-0.438168 (0.0005)	-3.605728
INVTP	-0.634849 (0.0096)	-2.648848	-0.571656 (0.0159)	-2.455229
CCC	-0.225441 (0.0205)	-2.361156	-0.244663 (0.0104)	-2.613617
SG	-0.000977 (0.9724)	-0.034652	0.008357 (0.7560)	0.311709
C	-0.116290 (0.2686)	-1.113528	-0.129381 (0.7560)	-1.287688
R-squared	0.443896		0.668791	
Adjusted R-squared	0.419361		0.624578	
F-statistic	1.958456		3.817666	
Prob(F-statistic)	0.031016		0.003419	
Durbin-Watson stat	1.679237		1.668440	

Correlated Random Effects - Hausman test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	7.629171	5	0.1779

Null Hypothesis (H0): Random effect is appropriate

Alternate Hypothesis (HA): Fixed effect is appropriate

Source: Authors' computation with the aid of E-view software, Version 9.0

Hausman (1978) specification test showed a probability of 0.1779 which is not significant at 5% level. It indicated that the Random Effects Generalized Least Squares (REGLS) on table 5 is the appropriate technique for analysis (Gujarati, 2003; Gujarati & Porter, 2009; Wooldridge, 2009). The adjusted R-square 0.62 implies that about 63% of the total variation in profitability is explained by effective working capital man-

agement proxied by Account Payable Period (APP); Account Receivable Period (ARP); Inventory Turnover Period (INVTP); Cash Conversion Cycle (CCC) and Sales Growth (SG) while about 27% are due to other variables outside the study but covered by the error term. The Durbin-Watson value of 1.67 revealed the absence of serial autocorrelation between the variables because the value falls within the tolerable level.

The results of the study on table 5 further showed that account receivable period, inventory turnover period and cash conversion cycle are significant at 5% level. These results invalidate their null hypotheses and confirm that account receivable period, inventory turnover period and cash conversion cycle contribute to profitability of selected firms. The t-statistics for account payable period and sale growth are statistically insignificant at 5%. Therefore, we fail to reject the null hypotheses that account payable period and sale growth have no significant relationship with profitability.

All the independent variables APP, ARP, INVTP, CCC and SG have coefficients of 0.004370, -0.438168, -0.571656, -0.244663 and 0.008357 respectively. These results showed that each of ARP, INVTP and CCC has a negative relationship with profitability of consumer goods manufacturing firms while each of APP and SG had a positive relationship. The results were in agreements with *a-priori* expectations. For example, the coefficient of correlation of Account receivable period was negative which implied that a decrease in period of debtors' collection would lead to an increase in profitability for much cash were available for profitable business operations. For account payable period, it implied that when the period to pay creditors was increased much cash would be available for profitable business operations which lead to an increase in profitability of selected firms.

Finally, the F-statistics is 3.817666 with a probability of 0.003419 representing that the joint significance of the variables p-value is less than 5%. The null hypothesis that working capital management does not have significant relationship with profitability of the selected consumer goods manu-

facturing firms in Nigeria is not valid. Hence, working capital management has a significant relationship with the profitability of selected consumer goods manufacturing firms in Nigeria.

DISCUSSION OF FINDINGS

The study revealed a negative and significant association between account receivable period, inventory turnover period, cash conversion cycle and return on asset. This indicated that a decrease in account receivable period, inventory turnover period, and cash conversion cycle bring about an increase in returns on asset among the consumer goods manufacturing firms in Nigeria. This result was in line with the studies of Shin and Soenen (1998), Lizaridis and Tryfondidis (2006), Falope and Ajilore (2009), Chatraji (2010) and Olabisi, Oladejo, Adegoke and Abioro (2019) whose studies found that working capital management needs the adoption of proper policy that encourages debtors to meet up with the credit sales within a very short period, convert inventory to finished goods within a very short period and reduce the period of cash conversion. Proper credit policy is expected to attract customers and boost sales. Kamal, Rana and Ahmed, (2013) concluded that such policies have a positive impact on profitability as it affects the firm's cash flows.

Further confirmation of these results is the studies of Asefi, Amirali, and Ghalebi, (2013). Bhattacharya (2003) established that when a company maintains inventory more than the required level, it results into tying down financial resources in non-productive activities which affect profitability. This implies that when accounts receivable period, inventory turnover period and cash conversion cycle are meticulously monitored and reduced, the profitability of the selected

firms will increase.

Also, in agreement with the results of the study are works of Dong and Su, (2010); Richards and Laughlin (1980), which affirmed that accounts receivable period, inventory turnover period and cash conversion cycle are inclusive effort to check the effectiveness of working capital. The return on asset is an overall index of profitability that measures returns to firm's assets. However, business profitability is galvanized when the period of collecting debts, converting inventory and converting cash are shortened.

However, account payable period and sale growth are negative and insignificant relationship with profitability which is in line with the studies of, Grace and Olang (2017) that discovered a positive and insignificant relationship between with profitability of selected companies. Therefore, the implication of insignificant relationship between account payable period, sale growth and profitability of consumer goods manufacturing implied that firms may always disappoint creditors. Based on the result presented above, we therefore accept the null hypothesis and concluded that there is no significant relationship between account payable period, sale growth and profitability (ROA) of listed consumer goods manufacturing firms in Nigeria.

Hence, it is suggested that the earlier the receivables are collected and inventory is turned over, cash is converted the better for the company because early collection of debts would improve liquidity and make settling short term obligations possible with the possibility of reducing external finance with service cost, hence galvanize profitability.

CONCLUSION

The study examined the effect of working capital management on the profitability of selected listed consumer goods manufacturing firms in Nigeria. Working capital management components investigated in the study included; Account Payable Period (APP), Account Receivable Period (ARP), Inventory Turnover Period (INVTP) and Cash Conversion Cycle (CCC). The collective results of the study indicated that all the measurements of working capital have a joint effect on the profitability of listed firms. It is safely concluded that Accounts Receivable Period, Inventory Turnover Period and Cash Conversion Cycle have a negative and significant effect on return on assets of selected firms while Account Payable Period and Sales growth have a positive and insignificant effect on return on assets of the selected firms.

The result of this study is not only distinct to the Nigerian business environment, it is also in line with other previous studies in the evolving economy but slightly different from the studies undertaken in other developed economies. The results of the study agreed with some previous empirical studies conducted in developed markets and also in line with Liquidity-Profitability Trade-Off theory, a negative and significant relationship was established among account receivable period, inventory turnover period and cash conversion cycle and return on asset.

The major reason for conflicting findings between studies undertaken in developed countries and that of developing economy may be as a result of poor attention given to working capital management by business environment in developing economies like Nigeria.

RECOMMENDATIONS AND IMPLICATIONS OF FINDINGS

The study recommended that management of consumer goods manufacturing firms should employ a variety of working capital management strategies that increase firms' profitability through effective monitoring of working capital that reduce the occurrence of bad debt that may affect profitability. The outcome of the study should motivate consumer goods manufacturing firms in Nigeria to pay more attention to account receivable period by ensuring that shorter time is given to debtors to make good their debts while maximally utilizing the time period given by the creditors to make payments for the goods bought on credits to firms' advantage in order to finance short time obligations.

REFERENCES

- Abubakar, A., Maishanu, M.M., Abubakar, M.Y., Aliero, H.M.** 2018. Financial leverage and financial performance of quoted conglomerates firms in Nigeria. *Sokoto Journal of Management Studies* 14(1): 85-100.
- Adegboyega, A., Olabisi, J., Kajola, S.O., Asaolu, T.O.** 2019. Does leverage affect the financial performance of Nigerian firms? *Journal of economics and Management*, 37 (3):5-22. <http://doi.org/10.22367/jem.2019.37.01>.
- Afza, T., Nazir, M.** 2009. Impact of aggressive working capital management policy on firm's profitability. *The IUP Journal of Applied Finance* 15(8): 20– 30.
- Altman, E.I.** 1983. *Corporate financial distress*, New York: Wiley.
- Asch, D., Kaye, G.R.** 1989. *Financial Planning: Modeling Methods and Techniques*, London: Kogan Page Ltd.
- Asefi, D.N., Amirali, B., Ghalebi, M.** 2013. A study of effect of working capital management on the profitability of listed companies' in Tehran Stock exchange. *Academic Journal of accounting and Economics* 2(4): 121-130.
- Bhattacharya, H.** 2003. *Working capital management, strategies and techniques* (1sted.) New Delhi: Prentice hall.
- Brigham, E.F., Gapenski, L.C., Ehrhardt, M.C.** 1999. *Financial Management: Theory and practice*. (19thed.) Japan: The Dryden Press, Pp 791-896.
- Chatraji, R.** 2010. Relationship between Development and Economic Growth and the Asian Financial Crisis. *International Journal of Finance and Banking Research* 3(4): 22-34.
- Deloof, M.** 2003. Does working capital management affect profitability of Belgium firms? *Journal of Business Finance and Accounting* 30(3): 573-588.
- Dong, H.P., Su, J.** 2010. The relationship between working capital management and profitability: A Vietnam Case. *International Research Journal of Finance and Economics* 49(3): 62-70.
- Egbide, B., Enyi, E.P.** 2008. Corporate solvency management: How effective are contemporary tools? *International Journal of Research in Commerce, Economics & Management* 1(3): 20 – 25.
- Eljelly, A.** 2004. Liquidity-profitability trade-off: an empirical investigation in an emerging economy. *The International Journal of Commerce*

and *Management* 4(3): 34-59.

Falope, O.I., Ajilore, O.T. 2009. Working capital management and corporate profitability: Evidence from Panel Data Analysis of selected quoted companies in Nigeria. *Research Journal of Business Management* 3(3): 73-84.

Filbeck, G., Krueger, T. 2005. Industry related differences in working capital management. *Mid-American of Business* 20(2): 11-18.

Gitman, L.J. 2016. *Principles of managerial finance* (7th edition). New York: Harper Collins College Publishers.

Grace, A.M., Olang, M.A. 2017. Effect of Working Capital on the Dividend Pay-Out by Firms Listed at the Nairobi Securities Exchange, Kenya. *International Journal of Finance and Banking Research* 3(2): 22-33.

Gujarati, D.N. 2003. *Basic Econometrics*, New York: McGraw-Hill/Irwin.

Gujarati, D.N., Porter, D.C. 2009. *Basic Econometrics*, New York: McGraw-Hill/Irwin.

Hausman, J.A. 1978. Specification tests in econometrics. *Econometrica* 46(6): 1215-1271. <http://doi.org/10.2307/1913827>.

Jayarathnea, S. 2014. Impact of working capital management on profitability of listed companies in Sri Lanka. *International conference on management and economics* 45(2): 269-274.

Judge, G.G., Griffiths, W.E., Hill, R.C., Lutkepohl, H., Lee, T.C. 1985. *The theory and practice of Econometrics*. (2nd ed.), John Wiley, New York.

Krueger, T. 2002. An analysis of working capital management results across industries, *Mid-American Journal of Business* 20(2): 11-18.

Kamal, N., Rana, N., Ahmed, A. 2013. Factors influencing corporate working capital: evidence from emerging economy. *Journal of contemporary issues in business research* 2(1): 11-30.

Lazaridis, I., Tryfonidis, D. 2006. Relationship between working capital management and profitability of listed companies in the Athens Stock Exchange. *Journal of Financial Management and Analysis* 19(1): 26-35.

Limin, L. 2012. The impact of working capital management on firm value: evidence from airline industry. *Master Thesis from Tilburg University, France*.

Loneux, M. 2004. The working capital approach. *Business Analyst* 25(2): 20-4.

Madura, J., Veit, E.T. 1988. *Introduction to financial management*, St. Paul: West Publishing company.

Manness, T.S. 1994. The cash flow timeline and the credit manager. *Business credit* July/August.

Muhoro, M.E. 2013. The relationship between capital structure and profitability of construction and allied companies listed at the Nairobi securities exchange (Unpublished Management Research Project). Nairobi: University of Nairobi.

Nazir, M.S., Afza, T. 2007. Working capital policies of firms: Empirical Evidence from Pakistan: *Paper presented at the 9th South Asian Management forum (SAMF)* on February 24-25

- North South University, Dhaka, Bangladesh
- Olabisi, J., Oladejo, D.A., Adegoge, J.F., Abioro, M.A.** 2019. Credit management policy and firms' profitability: Evidence from Infant manufacturing firms in Southwestern Nigeria. *Contemporary economy journal* 4(4): 59-69.
- Padachi, K.** 2005. Trends in working capital management and its impact on firm's performance: An analysis of Mauritian small manufacturing firms. *International Review Business Research Papers* 2(1): 45-56.
- Peel, M. J., Wilson, N.** 1996. Working capital and financial management practices in the small firm sector. *International Journal of small business* 14(2): 52-68.
- Prasad, R.S.** 2001. Working capital management in the paper industry. *Finance India* 15(1): 185-188.
- Raheman, A., Nasr, M.** 2007. Working capital management and profitability – case of Pakistani firms. *International Review of Business Research Papers* 3: 279–300.
- Richards, V. D., Laughlin, E. J.** 1980. A cash conversion cycle approach to Liquidity Analysis. *Financial Management spring* Pp 32-38.
- Shah, S.M.A., Sana, A.** 2005. Impact of Working Capital Management on the Profitability of Oil and Gas Sector of Pakistan, *Editor-In-chief or e* 15(3): 301-307.
- Shin, H.H., Soenen, L.** 1998. Impact of working capital and corporate profitability. *Journal of Finance Practice and Education* 8(2): 37-45.
- Smith, K.** 1980. Profitability versus liquidity tradeoffs in working capital management, in readings on the management of working capital, New York, St. Paul: West Publishing Company.
- Uremadu, S., Egide, B., Enyi, P.E.** 2012. Working capital management, liquidity and corporate profitability among quoted firms in Nigeria: Evidence from productive Sector. *International Journal of academic Research in Accounting, finance and Management Sciences* 2(1): 98-102.
- Waithaka, A.** 2012. The relationship between working capital management practices and financial performance of listed Agriculture companies in Kenya, *Research thesis in Business Administration*, University of Nairobi, Kenya.
- Wooldridge, J.M.** 2009. Introductory econometrics: a modern approach (4thed.).

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