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WORKING CAPITAL MANAGEMENT AND FIRMS' PROFITABILITY: EVIDENCE FROM CONSUMER GOODS SECTOR IN NIGERIA (2011 – 2018)

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Abstract

Firms' profitability tends to be maximized as a result of efficiency and interrelationship between some prominent factors like a firm's size, working capital, financial and operational risks among others. However, from all these factors, working capital is crucial as it affects the operational activities of firms. This study investigates the impact of working capital management on the profitability of firms in the consumer goods sector in Nigeria. Generalized least squares technique was used to analyze the data extracted from the audited financial statements of the sampled firms for the period of 2011 to 2018. The study revealed that at 0.05 level of significance, average collection period has a significant positive impact on the profitability of consumer goods firm; inventory holding period has no significant impact on profitability of consumer goods firms; average payment period has significant positive impact on profitability of consumer goods firms; and cash conversion cycle has significant negative impact on the profitability of consumer goods firms. The study concluded that working capital management plays a significant role in the profitability of consumer goods firms in Nigeria. The study, therefore, recommended that firms should negotiate favourable credit terms with both their customers and suppliers while at the same time, reduce their cash conversion cycle for improved profitability.

Key Words: Working Capital, Profitability, Consumer Goods, Cash Conversion Cycle, Account Receivable.

Introduction

Working Capital Management (WCM) is paramount in corporate financial decisions since it directly affects the profitability of the firm. It takes into consideration, the trade-off between risk and return; and is concerned with the problems that arise in attempting to manage the current assets, the current liabilities and the interrelationship that exists between them (Husain & Alnafee, 2016). Working capital management is essential to a firm's survival because of its effects on a firm's profitability and risk, and consequently its value (Hassan & Ali 2016). However, it has been accentuated that, working capital of a company plays a significant role in making a firm profitable or not as this necessitates most of the potential investors and other stakeholders to analyze position statement to arrive at the net-working capital and evaluate its management (Rehman & Anjum 2013).

Consumer goods firms as a component of the manufacturing industry in Nigeria have been growing since 2010 at about 7% of Gross Domestic Product every year up till June 2014 when the fall in oil price slowed down the growth leading to shrinkage of investment in the sector (Eya, 2016). The shrinkage in investment is also supported by other challenges such as infrastructural issues, logistics, operational, marketing and branding, financial management, lack of adequately trained workers and inconsistencies in government policies. Financial management problem has to do with either excessive or insufficient working capital in consumer goods sector. Stephen (2012) opined that too much working capital signifies inefficiency whereas too little cash in hand implies that the survival of the business is shaky as most business organizations do not hold the right amount of inventories, debtors, and cash; as a result of which the firms are unable to meet there maturing short term obligations and its upcoming operational needs.

However, after the second quarter of 2017 in a swift reaction to government policy challenges, the Federal Government made a frantic effort to ensure that the manufacturing industry of which the consumer goods is a sector thrives in Nigeria to bounce back the Nigerian economy which had solely

depended on oil exportation as a significant source of foreign exchange. Despite all these, the peculiarity of financial management challenges of the consumer goods sector look extraordinary, thus, inefficient working capital management needs to be emphasized. Being the components of working capital, inventory holding period, average collection period, average payment period, cash conversion cycle and liquidity influence the financial decision of firms and ultimately, their performance. Possible implications of inefficient management of inventory, receivables, cash conversion cycle and payables as highlighted by Duru (2014) are temporary/permanent closure of manufacturing industries in Nigeria; loss of employment; inability to pay dividends; acquisition by stronger companies, drops in financial results among others. This became more evident in the case of Nigeria Breweries after-tax profit which declined by 25.37%, i.e. N38 billion in 2015 to N28.4 billion in 2016 (Leadership Business Report, 2017).

The reviewed works of literature in Nigeria showed that much emphasis has been laid on sectors such as industrial and domestic goods sector, financial sector, small and medium scale enterprises sector, oil and gas sector, health and pharmaceuticals industries (Adediran, Josiah, Bosun & Imueze, 2012; Okoye, Erin, Modebe & Achugamonu, 2016; Paul & Agbo, 2014; Ojeani, 2014; Duru, 2014). It is therefore imperative to bridge the time and methodological gap by examining how working capital management affects the profitability of consumer goods firms by adopting generalized least square and looking at the effect up to the 2018 financial year. To achieve this, the following hypotheses are formulated:

H_{O1}: Inventory holding period has no significant impact on the profitability of consumer goods firms in Nigeria.

H_{O2}: Receivables collection period does not significantly impact on the profitability of consumer goods firms in Nigeria.

H_{O3}: Payable payment period has no significant impact on the profitability of consumer goods firms in Nigeria.

H_{O4}: Cash conversion circle does not significantly impact on the profitability of consumer goods firms in Nigeria.

Literature Review

Conceptual Review

According to Vallalnathan & Joriye (2012), working capital is the flow of ready funds necessary for the working of a concern. It comprises funds invested in current assets, which in the ordinary course of business can be turned into cash within a short period without loss in value or disruption of the organization's operations. Every company has to arrange for adequate funds to meet the day-to-day expenditure apart from investment in fixed assets. Akinsulire (2011) refers to working capital as the items that are required for the daily production of goods to be sold by a company. It can also be defined as the excess of current assets over current liabilities. Adeniji (2008) described working capital as the difference between an organization's current assets and its current liabilities, and functions primarily to support the daily financial operations of an organization, including the purchase of stock, the payment of salaries, wages and other commercial expenses and the financing of credit sales.

Salman, Folajin, & Oriowo (2014) emphasized that while working capital management can be defined in several ways. Its main components consist of cash conversion cycle (inventory management, accounts payable and accounts receivable management), current assets to current liabilities ratio (current ratio), current assets to total assets ratio, current liabilities to total assets ratio and total debts to total assets ratio. However, working capital is categorized into gross and net. Gross working capital means the amount of funds invested in current assets that are employed in the business processes while net working capital refers to the difference between current assets and current liabilities (Khan & Jain, 2005). Ojeani (2014) posited that current assets and liabilities, that is, assets and liabilities with maturities of less than one year, need to be carefully managed. Current assets may include inventories of

raw materials, work-in-progress and finished goods, trade receivables, short-term investments, and cash, while current liabilities may consist of trade payables, overdrafts and short-term loans.

Consumer goods are tangible goods that are purchased for direct consumption to satisfy human needs or wants as this is in contrast to producer goods, which are purchased as an input to produce another good. Consumption in this context does not necessarily mean consuming, as in eat. There are numerous consumer goods that no one would consider eating, such as clothes. Clothing is a good purchased to satisfy a human need - the need to be clothed (Kallie, 2016). Eya (2016) describes consumer goods as products that are purchased for consumption by the average consumer. Also known as final goods, consumer goods are the ultimate result of production and manufacturing and are what a consumer will see on the store shelf. Clothing, food, and jewellery are all described consumer goods. Necessary materials such as copper are not considered consumer goods because they must be transformed into usable products.

Maximilian (2017) identified four types of consumer products based on their characteristics and consumer purchasing behaviour: convenience products, shopping products, speciality products, and unsought products. A convenience product is a consumer product or service which customers usually buy frequently, immediately and without great comparison or buying effort. They usually have a low price and are placed in any location to make them available when consumers need them. Shopping products are a consumer product that the customer often examines on attributes such as quality, price, and style in the process of selecting and purchasing. They are often less frequently bought and more carefully examined. Therefore, consumers spend much more time and effort in gathering information and analyzing alternatives. Kallie (2016) gives account of speciality products as consumer products and services with unique characteristics or brand identification for which a significant group of consumers is willing to make a unique purchase effort. The speciality product requires a special purchase effort but applies only to specific consumers. Unsought products are those consumer products that a consumer either knows nothing about or knows about but does not consider buying all things being equal. Thus, these types of consumer products consumers do not think about regularly, at least not until they need them. Most innovative products are unsought until consumers become aware of them. Other kinds of these types of consumer products are life insurance, pre-planned funeral services etc. Due to their nature, unsought products require much more advertising, selling and marketing efforts than other types of consumer products (Maximilian, 2017).

According to Eljelly (2004), profitability is the ability to create an excess of revenue over expenses to attract and hold investment capital. Four useful measures of a firm's profitability are: return on assets (ROA), return on equity (ROE), operating profit margin and overhead percentages. The ROA measures the performance to all the firm's assets and is often used as an overall index of profitability, and the higher the value, the more profitable the firm. Return on Asset is, therefore, an indicator of managerial efficiency as it shows how the firm's management converted the institution's assets under its control into earnings (Falope & Ajilore, 2009). Naceur (2003) emphasized that to analyse the effect of working capital management on profitability, we operationalize profitability as Return on Assets (ROA). ROA shows the profit earned per currency of assets which reflects the management ability to utilize the financial and real investment resources to generate profit. The return on assets (ROA) is described as a functional indicator of a firm's profitability is calculated by dividing net income by total assets (Ugwunta, Uchenna & Okwo, 2012). On the contrary, the ROE measures the rate of return on the owners' equity employed in the firm (Pandey, 2009). Return on Equity indicates how efficient the firm has used the resources of owners. The operating profit margin measures the returns to capital per naira of gross revenue. It focuses on the per unit produced component of earned profit and the asset turnover ratio.

Theoretical Review

The theory of working capital management was propounded by Sagan (1955) and laid a foundation for research in working capital management. Sagan postulated that working capital affects the operational efficiency of any company and warned that its inefficient management could vitally

jeopardize the health of the company. He pointed out that the manager's operations as regards money are primarily in the area of cash flows generated in the course of business transactions (Harris, 2005). However, the financial manager must be conversant with what is being done with the control of receivables, inventories, and payables because all these accounts affect cash position.

Thus, it was advocated that the management of accounts receivable, accounts payable, inventories and cash is vital for the operational functions of a firm. Furthermore, the theory of working capital management argues that the primary task of a money manager is to provide funds as and when needed and to invest temporarily surplus funds as profitably as possible in view of his particular requirements of safety and liquidity of funds by examining the risk and return of various investment opportunities (Russo, 2013).

Richard & Laughlin (1980) affirmed that the traditional approach of relying on current or acid-test ratios as solvency indicators is quite defective compared to the operating cycle approach where accounts receivables and inventory turnover measures are included in liquidity management. According to the operating cycle theory, when firms grant more liberal credit terms to their customers, there is a higher tendency of having a more prominent, but ultimately less liquid investment in the cycle (Jakpar, Ling & Siang, 2017). By implication, the inventory turnover, i.e. the number of times with which business firms convert the totality of their raw materials stock, their work-in-progress and ultimately the finished goods into product sales will be lengthened. Also, Average Collection Period as a proxy for firm's average receivables investment is subsequently converted to cash. One critical aspect to note is that changes in collection and credit policy have a direct effect on the balance of accounts receivable outstanding, concerning the annual firm's sales. Another critical aspect is the inventory holding period; the longer the inventory holding period of the firm, the more the investment in working capital. By implication, the firm will be liquid but the profit will reduce due to avoidable costs of holding inventories

Review of Empirical Literature

Mahato (2012) examined the impact of working capital management on the profitability of the Indian Telecom industry. The study covered 5 years, i.e. 2010-2015. The data analysis was on secondary data of eight telecom companies listed in the National Stock Exchange of India. The result of correlation analysis shows the ROA has a negative relationship with Inventory Holding Period, Average Collection Period, Cash Conversion Cycle and Current ratio while Return on Asset has a positive relationship with Average Payable Period, Debt ratio and Firm size.

Napompech (2012) examined the effects of working capital management on the profitability of Thai listed firms. The regression analysis was on a panel sample of 255 companies listed on the Stock Exchange of Thailand from 2007 through 2009. The results indicate a negative relationship between the gross operating profits and inventory conversion period and the receivables collection period. Thus, managers can increase the profitability of their firms by shortening the cash conversion cycle, inventory conversion period, and receivables collection period.

Furthermore, Erik (2012) researched on effects of working capital management on company's profitability: an industry-wise of Finnish and Swedish public companies. The study examined two variables with corporate performance and concluded that firms could increase their gross operating profitability by reducing the cash conversion cycle and net trade cycle. Moreso, effective working capital management can increase the net present value of a firm's cash flow thus adding to shareholders' value.

Adediran, et al., (2012) empirically investigated the impact of working capital management on the profitability of a sample of small and medium-sized Nigerian firms. The data of 30 SME's for a single period of 2009 were analyzed, and the result demonstrates that managers can create value by reducing their firm's number of day's accounts receivable and inventory; equally shortening the cash conversion cycle also improves the firm's profitability.

Besides, Beernink (2013) studied the relationship between working capital management and corporate profitability for a sample of large European firms. A panel data of 224 European firms, consisting of the non-financial firms of the FTS Eurofirst 300 Index, was collected for the period 1996-2008. The results show that only the number of days inventory the average time it takes firms to sell their products has a significant relationship with corporate profitability, suggesting that low profitable firms reduce their number of days inventory.

Rehman (2013) examined the impact that running assets management on the profitability ofthe Pakistan cement sector. Data were collected from Annual Reports and sample consist of 10 Pakistani cement Companies listed at KSE from 2003-2008. The working capital management and profitability relationship was examined with correlation; regression analysis the result proved that there is an inverse and positive association between working capital management and profitability in the cement industry of Pakistan.

Ani, Okwo, & Ugwunta (2013) investigated the impact of working capital management on the profitability of Brewery firms in Nigeria. Multiple regression equations were applied to a cross-sectional and time-series data of five world-leading beer brewery firms after ensuring that the data are stationary and co-integrated. The outcome of the analysis pinpoints that working capital management as denoted by the cash conversion cycle, sales growth and lesser debtors' collection period impacts on beer brewery firms' profitability.

Similarly, Nteere (2014) investigates the effect of working capital management on the profitability of the five-star hotels in Nairobi. A sample of four five-star hotels out of the targeted population of seven was used and the period was between 2009 and 2013. The findings show that more profitable firms take the shortest time to collect receivables from their customers and wait longer to pay their bills by withholding their payment to suppliers to take advantage of the cash available for their working capital needs. The study recommended that managers should focus on collecting receivables as quickly as possible and lag payment of creditors as long as it does not strain their relationship, to maximize the profitability of their firms.

Paul et al., (2014) examined the impact of working capital management on the profitability of the Nigerian cement industry for eight (8) years (2002-2009). The study found an insignificant negative relationship between the profitability of cement companies quoted on the NSE and the number of days account receivables is outstanding and number of days inventories is held. Also, a significant positive relationship exists between the profitability and the cash conversion cycle (CCC). The study, therefore, recommends that managers of these cement companies should manage their working capital in more efficient ways by reducing the number of days inventory is held to an optimal level to enhance their profitability as well as create value for their shareholders.

In the same vein, Monday, Lawal, & Ilori (2014) examined the impact of working capital management on firm profitability using quoted oil and gas companies in Nigeria for the period 2003-2013. Data were extracted from published financial statement of selected oil and gas companies. The result of the study showed that the relationship between components of working capital management and profitability was significant, in that working capital management explained a substantial proportion of variation in the profitability of the firms. The study concluded that working capital management plays a vital role in the existence of the operations of oil and gas companies.

Ogbuji et al., (2014) assessed working capital management policy and financial performance in the Nigerian foods and beverage industry. The study focused on Nestle Nigeria Plc for a period of five (5) years, 2008 to 2012. The results revealed that a significant negative relationship existed between working capital management and profitability performance and at the same time, a negative insignificant association does subsist between working capital management and liquidity performance.

Senthilmani (2014) also examined the Impact of Working Capital Management on Profitability in UK Manufacturing Industry. The study limited the scope to 5 years for companies listed on the London Stock Exchange and concluded that there is a significant relationship between working capital

management and profitability of manufacturing firms in the UK. Similarly, Serrasqueiro (2014) examined Working Capital Management impact on profitability: Empirical study based on Portuguese firms. The study developed descriptive and empirical statistics to analyse the data collected from Bloomberg for the period 2002-2006 on an annual basis. The results consistently confirmed the hypothesis that managers should care about different components of working capital to manage it efficiently once these various components do have an impact on corporate profitability.

Agrim & Rahul (2015) examined the effect of working capital on the profitability of Indian firms. A panel data of 364 companies listed on the Bombay Stock Exchange for five years was obtained. The reliance of gross operating profit ratio on cash conversion cycle, debtors' collection period, average inventory period, and the creditors' payment period is examined through a linear regression model. The results suggest that a quick cash conversion cycle, prompt collection of accounts receivables and small inventory periods are favourable for earning higher profits.

Hassan, *et al.*, (2016) studied the effects of working capital management on firm profitability in the merchandise firms in Mogadishu. The results pinpoints that there was a significant linear relationship between the average collection period, inventory management, cash conversion cycle and firm's profitability of merchandise firms in Mogadishu. But there was an insignificant relationship between the average payment period and the firm profitability. The conclusions were based on the objectives of the study that working capital management components had a significantly and positively influence on firm profitability of merchandise firms.

In the same vein, Cristae & Cristea (2016) conducted a research on the relationship between the working capital management and corporate profitability for the companies from manufacturing industry listed on the Bucharest Stock Exchange, Romania for a period of five years from 2011 to 2015. The research revealed that there is a negative relationship between profitability, measured through return on assets, and cash conversion cycles. The negative association assumes that, when the cash conversion cycle increases, the profitability of the firm decreases. Thereby, managers can increase the profitability of their companies reasonably, by handling the cash conversion cycle correctly and by keeping its components at an optimal level.

Jakpar, et al., (2017) Studied Working Capital Management and Profitability: Evidence from the Manufacturing Sector in Malaysia. The study used a sample of 164 manufacturing firms listed on the Main Board of Bursa Malaysia, covering a span of five years from 2007 to 2011. A discriminatory panel regression and Pearson correlation were used to test the hypotheses. The empirical evidence found that there is an existence of a significant positive relationship between exogenous variables, the average collection period, inventory conversion period and the firm's size and its endogenous variable, which is the firm's profitability. The findings also showed a significant inverse relationship between debt ratio (leverage) and firm's profitability, but the firm's capability to translate working capital into cash promptly, as a proxy in the log cash conversion cycle has no impact on firm's profitability.

In furtherance to the above review, the consumer goods sector in Nigeria as a component of the manufacturing sector is yet to be critically looked into in isolation taking cognizance of the elements of working capital management, i.e. inventories, receivables, payables and cash conversion cycle and a compelling factor which is the firm's size which contributes to the performance of a firm. It, therefore, becomes imperative to bridge the gap observed from previous studies by assessing the working capital and profitability of consumer goods sector in Nigeria.

Methodology

The study used ex-post facto research design. Ex-post facto research evaluates the relationship between variables that have already occurred. Thus, data were extracted from the published financial statement of the companies which signifies the occurrence of those financial transactions. The population of the study encompasses all 23 companies in the consumer goods sector listed on the floor of the Nigerian Stock Exchange as at 31st December, 2018 (Nigeria Stock Exchange Fact Sheet, 2018).

Purposive sampling technique was used to select 22 out of the 23 consumer goods firms, and the sample size was determined using Taro Yamane's formula (1964).

Model Specification

The study adapts the model of Nteere (2014), which was used to examine the effect of working capital management on the profitability of the hotel industry in Kenya. The study models Net Profit Margin to proxy profitability while average collection period, average payment period, inventory holding period and cash conversion cycle were used to proxy the working capital management. Also, the firms' size was used as control variables. Generally, the model is modified by making Return on Asset the dependent variable thus:

$$ROA_{it} = \beta_0 + \beta_1 INV_{it} + \beta_2 ACP_{it} + \beta_3 APP_{it} + \beta_4 CCC_{it} + \beta_5 SZE_{it} + \mu_{it}$$

Where:
ROA = Return on Assets of firm i at time t;
β_0 = the intercept of the equation
β_{1-5} = Coefficient of the independent variables
ACP_{it} = Average Collection Period of firm i at time t
APP_{it} = Average Payment Period of firm i at time t
INV_{it} = Inventory Holding in Days of firm i at time t
CCC_{it} = Cash Conversion Cycle of firm i at time t.
SZE_{it} = Size of firm i at time t.
μ_{it} = Error Term

Data Analysis, Results, and Discussions

Table 1 presents the descriptive statistics for the dependent variable (return on assets) and explanatory variables (inventory holding period, average collection period, average payment period, cash conversion cycle and firm's size) of listed consumer goods firms listed on the Nigeria Stock Exchange. From the table, return on assets has minimum and maximum values of -0.1152 and 0.5502, respectively, while the mean value is 0.0904 as well as the standard deviation value of 0.1087. The standard deviation of 0.1087 signifies that the data deviate from the mean value by 0.1087, implying that there is a wide dispersion of the data from the mean because the standard deviation is higher than the mean value.

Table 1: Descriptive Statistics of the Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Roa	176	.0904	.1087	-.1152	.5502
Acp	176	.1415	.1818	0	1.4062
App	176	.3385	.5238	0	3.6861
Ccc	176	.9213	.6498	0	3.2865
Inv	176	.0815	.051151	0	.3595
Sze	176	.1805	.1663	0	.9489

Source: Authors' Computation, 2019.

The table also shows that the mean of the average collection period (ACP) of the selected firms is 0.1415 with a standard deviation of 0.1818, and minimum and maximum values of 0.0000 and 1.4062 respectively. This implies that the performance of the firms in terms of average collection period is on average 0.1415, and the standard deviation value indicates that average collection period of the sampled firms deviates from the mean value from both sides by 0.1818, implying that there is significant

dispersion of the data from the mean because the standard deviation is higher. The Average payment period (APP) of the selected firms has a mean of 0.3385 with a standard deviation of 0.5238. The minimum and maximum values are 0.0000 and 3.6861 respectively. This implies that average payment period of the sampled firms is on average of 0.3385, and the standard deviation value indicates that the value deviates from the mean from both sides by 0.5238, implying that there is wide dispersion of the data from the mean because the standard deviation is larger than the mean.

Furthermore, the table shows that the mean of the cash conversion cycle (CCC) of the firms is 0.9213 with a standard deviation of 0.6498. The minimum and maximum values are 0.0000 and 3.28661, respectively. This implies that the cash conversion cycle of the firms is on average 0.9213. The standard deviation indicates that the value of the firms' cash conversion cycle deviates from the mean value from both sides by 0.6498. This implies that there is a slight dispersion of the data from the mean because the mean is higher than the standard deviation. Inventory holding period (INV) of the selected firms recorded a mean value of 0.8149 with a standard deviation of .0512. The minimum and maximum values are 0.0000 and 0.3595, respectively. This implies that inventory holding period of the sampled firms is on average 0.8149, and the standard deviation value indicates that the value deviates from the mean from both sides by 0.0512, implying that data are concentrated around the average because the standard deviation is much lower than the mean. The selected firms' size has a minimum value of 0.0000 and a maximum value of 0.9489 with an average (mean) value of 0.1805 and a standard deviation of 0.1664. This further implies that there is significant dispersed data from the mean because the standard deviation is lower than the mean value.

Table 2: Hausman Specification Test

	Coefficients			
	(b)	(B)	(b-B)	Sqrt(diag(V b-V_B))
	Fixed	Random	Difference	S.E.
Acp	.2441	.2259	.0182	.
App	.0868	.0812	.0056	.
Ccc	-.0219	-.0359	.0141	.0039
Inv	-.1378	-.1561	.0183	.
Sze	.0627	.0304	.0323	.0077

chi^2 (5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 9.81
Prob>chi2 = 0.1997
Source: Authors' Computation, 2019

Table 2 presents the result for Hausman specification test which was used to test the endogenous regressors. This is to ascertain the values of the endogenous regressors determined by other variables in the system to ensure that there is no correlation between a predictor variable and an error term. From the table above, the result reveals chi^2 value of 9.81 with 0.1997 probability which is above the 0.0500 significant margin. The null hypothesis is therefore accepted stating that the difference in coefficients is not systematic. From the above result, the random effect was accepted and interpreted as the appropriate model.

Table 3 Panel Data Regression Results (Random Effect)

Random-effects GLS regression	Number of obs = 176
Group variable: countries	Number of groups = 22

R-sq: within = 0.7219 Obs per group: min = 8
between = 0.0596 avg = 8.0
overall = 0.3763 max = 8
Wald chi2(5) = 58.80
corr(u_i, X) = 0 (assumed) Prob> chi2 = 0.0000

Roa	coef.	Std. Err.	Z	p>|z|	[95% Conf. Interval]
Acp	.2259	.0542	4.17	0.000	.1197 .3322
App	.0812	.0206	3.95	0.000	.0409 .1215
Ccc	-.0359	.0173	-2,08	0.037	-.0698 -.0021
Inv	-.1561	.2133	-0.73	0.464	-.5742 .2620
Sze	.0304	.0658	0.46	0.644	-.0985 .1594
Cons	.0715	.0398	1.80	0.072	-.0065 .1496

sigma_u| .05288207
sigma_e| .06412116
rho | .40482029 (fraction of variance due to u_i)
Source: Authors' Computation, 2019.

Based on the result showed in Table 3, the study revealed that the average collection period has a positive impact on the profitability of consumer goods firms, and its p-value indicates its significance. This implies that a firm granting favourable credit terms to its customers will have an increase in revenue base as more customers will patronise it. It is, however deduced that an increase in profitability of consumer goods firms can, therefore, be attributed to increasing their accounts receivable and long credit days granted to their customers. This finding conforms with Napompech (2012), Ojeani (2014), Salman *et al.,* (2014) and Ajayi, *et al.,* (2017) who asserted that customers longer time to pay up their account is an incentive for an increased sales and consequently financial performance. This finding is however, contrary to Vural, *et al.,* (2012) who found that receivable collection period does not impact on firm's profitability.

Average payment period has a positive impact on the profitability of consumer goods firms, and the result shows that it is statistically significant. This implies that increase in the payable period to creditors increase profitability of consumer goods firms. This confirms that firms were granted favourable credit terms by their suppliers which enable them to turn around cash before it is eventually paid to creditors. This boosts firms' profitability as the firms are carrying ample operating activities. This study is in tandem with the work of Mathuva (2010), Ajayi, *et al.,* (2017), Senthilmani (2012). However, this finding is contrary to Napompech (2012), Husain, *et al.,* (2016) who asserted that an increase in payment period leads to a decline in the profitability of the firms.

Cash conversion cycle has a negative impact on the profitability of consumer goods firms. The result also shows that it is statistically significant, and the implication is that the increase in cash conversion cycle reduces profitability and vice versa. Cash conversion cycle is the days from which raw materials are bought to the date cash is received from customers. This period should not be long to ensure the profitability of firms. This finding is in consonance with Vural, *et al.,* (2012), Mathuva (2010), Husain, *et al.,* (2016) who asserted that taking consideration of the nature of the product, there should be a speedy delivery of goods and faster collection of cash from receivables in order to have a short cash conversion cycle to ensure increased profitability. This finding is, however, contrary to the work of Ojeani (2014) who infers that the cash conversion cycle has a positive impact on firms' profitability.

Finally, inventory holding period has a negative impact on the profitability of consumer goods firms, and the result shows that it is statistically insignificant. The implication of this is that a firm that holds inventory for a more extended period risks the chance of not being profitable as the avoidable costs involved in maintaining inventory such as storage costs, insurance costs, obsolescence cost,

deterioration costs reduce profitability. It also portrays an ineffective marketing strategy as inventory stays longer before it is being sold. This finding aligns with Paul, *et al.,* (2014), Napompech (2012), Senthilmani (2014), Ojeani (2014) who infers that an increase in inventory holding period reduces the profitability of manufacturing firms. However, this finding is contrary to Akinlo (2011) and Ajayi, *et al.,* (2017).

Conclusion and Recommendations

Based on the findings of the study, it is evident that working capital management plays a significant role in the profitability of consumer goods firms in Nigeria. Both business and financial environments need to be assessed to design and adopt appropriate working capital policies. This will help firms to solve the problem of overtrading, under-capitalisation and other commercial defects that may arise as a result of improper working capital management.

Given the findings of this research work, working capital management has a significant impact on the profitability of consumer goods firms. The study, therefore, recommends based on the findings that firms should grant more favourable credit terms to their customers as this will boost their revenue base as a result of more patronage. Inventory holding period should not be long as its longevity reduces profits. Firms should negotiate a favourable credit terms (i.e. longer payment period) with their suppliers. Lastly, in improving profitability, firms should ensure that their cash conversion cycle is reduced. This involves fast racking the numbers of days between receiving cash from debtors and paying the creditor for goods supplied.

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