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Working Capital Management and the Financial Performance of Basic Materials Manufacturing Companies in Nigeria

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ABSTRACT

The management of working capital involves managing inventories, accounts receivable and payable, and cash. Based on this assertion, this dissertation is to examine working capital management and the financial performance of basic materials manufacturing companies in Nigeria. The objective of the study is to examine the relationship between working capital management and financial performance of basic material manufacturing companies in Nigeria, The study is anchored with Fisher's separation theory. The study used ex-post facto research design which also known as after-the-effect research, data analyses of financial information were extracted from the manufacturing companies Financial Statements for the years 2001 to 2015. These statements used to examine how an independent variable, present prior to the study, affects a dependent variable. In order to arrive at the testable conclusion, stratified random sampling techniques were adopted. Ordinary Least Square (OLS) regression model were used in this research work with the model findings, which revealed that debtors, creditors and inventory has no significant relationship with return on investment of manufacturing companies in Nigeria. The study therefore recommended that managers of basic material manufacturing companies in Nigeria should intensify effort on how to improve the management of debtor as a component of working capital components than creditors and inventories in their industry.

Keywords: Working capital, accounts receivable and payable, and cash

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INRODUCTION

Working capital management decisions involve managing relationships between a firm's short-term assets and liabilities to ensure that a firm is able to continue its operations, and have sufficient cash flows to satisfy both maturing short-term debts and upcoming operational expenses at minimal costs, and consequently, increasing corporate profitability. Working capital refers to the firm's current assets and current liabilities required to be combined with fixed assets for the day-to-day business activities (Barine, 2012). The current assets necessary for the working of fixed assets are accounts receivable, inventories and cash, while the current liabilities necessary for the working of fixed assets are accounts payable. These current assets and current liabilities constitute the components of working capital. Management of working capital is an important component of corporate financial management because it directly affects the financial performance of organizations.

It is imperative for every business to have sufficient liquid resources so as to maintain a daily cash flow. This is not only essential in the short run but it is much necessary to keep a business as a going concern (BPP, 2006). It therefore implies that liquid resources are a vital element of an organization. However, as important as that is, care must be taken so that balance is maintained in the level of liquidity of a firm since "cash pays no interest" (Uremadu, Egbide & Enyi, 2012). The short-term solvency of a firm is a function of how liquid a firm is and also crucial to the working capital. Working capital is the difference between a firm's current assets and current liabilities. Working capital management is to increase the profitability of a company and to ensure that it is liquid enough to meet its obligations in the short-term. Also, working capital has a lot to do with how risky a business is and therefore managing it properly can improve the performance of an organization. According to Sen and Oruc (2009), working capital management is consequential to a firm and this is usually explained by the relationship between working capital management and profitability

A firm should ensure that it does not suffer from lack of liquidity and also that it is not too much highly liquid. Akinsulire (2010) opined that the failure of a company to meet its obligations due to lack of sufficient liquidity will result in bad credit image, loss of creditor's confidence or even in lawsuits resulting in the closure of the company. A very high degree of liquidity is also bad because the assets earn nothing, it is, therefore, necessary to strike a proper balance between liquidity and lack of it (Olugbenga, 2010). If an organization's current assets do not exceed its current liabilities, it may deprive the organization of paying back its creditors in the short term. A declining working capital ratio over a longer time period could be a red flag that may lead to critical analysis, and eventually lead to bankruptcy (Adegbie, 2012). Working capital management is important due to many reasons, for one thing, the current assets of a typical

manufacturing firm accounts for over half of its total assets, for a distribution company they account for even more. Excessive levels of current assets can easily results in a firm's realizing a substandard return on investment.

An optimal working capital management is expected to contribute positively to the creation of firm value. To reach optimal working capital management firm manager should control the tradeoff between liquidity (ability to pay bills, keep sales coming in, keep customers happy, play it safe) and profitability (size of earnings after taxes) accurately. Working capital management is the lifeblood of business and every manager's primary task is to help keep it flowing and to use the cash flow to generate profits. Working capital in business is considered as lifeblood in human body (Saghir, Hashmi & Hussain, 2011).

This major component has constituted a significant value in the working capital taking up to 50 to 75% of the total balances in the asset quality of manufacturing forms (Almazari, 2014). Also before the wake of the global recession, working capital management has been an important subject matter to ensuring the stability and hence the survival of a business and after the economic meltdown it became much more important. According to a study carried out by the Royal bank of Scotland (RBS, 2011), it was found that as a result of the last economic recession that hit the world, companies around the world especially in North America, Europe and Asia have tried to improve on their efficiencies and one of their strategies is the management of their working capital. This study therefore seeks to investigate the efficiency of working capital management of basic materials manufacturing companies in Nigeria so as to enhance industrial growth.

Many firms in Nigerian business environment are faced with the problem of working capital management (Oluboyede, 2007). Adegbie, (2012) noted that this problem has been attributed to failure of some investments expected to give high rate of return. Many factories had closed down because of illiquidity and poor profit performance (Takon, 2013).

A firm's working capital decision usually would interpolate with its investment return. The rate of return accruable to investors on their investment determines how long their resources can be kept in an organization. This assuredly, would leave the firm in a contest for its available funds for investments, or to attain optimality in its working capital composition. Recent observations by Adeyemi and Oboh (2011) also noted that most firms in Nigeria are not efficient in management of their working capital which has actually affected the return accruable from the organizations. The current financial shortage around the world which has lead to cash crunch made many organizations to look inward to improving management of internal resources. It is against this background that the study was carried assess working capital management so as to determine its effect on financial performance of basic materials manufacturing companies in Nigeria.

The broad objective of the study is to determine the relationship between working capital management and financial performance of basic materials manufacturing companies in Nigeria. The specific objectives are:

1. To examine the relationship between account receivables as a component of working capital and return on investment of basic material manufacturing companies in Nigeria.
2. To determine the relationship between inventory cost as a component of working capital and return on investment of basic material manufacturing companies in Nigeria.
3. To ascertain the relationship between account payable as a component of working capital and return on investment of basic material manufacturing companies in Nigeria.

REVIEW OF RELATED LITERATURE

Conceptual Framework

Working Capital

To illustrate the working capital of a firm, the working capital cycle is used. The cycle begins with the purchase of raw materials which can be found in the inventory. Later on, these raw materials are transformed in finished goods. These goods are stocked in the inventory until they are sold to a customer. The sale can be purchased by cash or by trade credit. This trade credit provides a delay until the cash is received. With every step of the cycle there are associated costs, which are direct costs and opportunity costs.

Working Capital Management (WCM)

The above discussed working capital and the cycle that it forms is managed by what is called working capital management (WCM). WCM is part of the financial management of a firm, other parts are e.g. capital budgeting and capital structuring. The first two are mainly focused on the managing of long-term investments and returns. It is possible that inefficient WCM can lead to bankruptcy, even if the profitability of a firm is constantly positive. A reason for this could be that excessive levels of current assets can easily lead to a below average return on investment for a firm (Raheman & Nasr, 2007). An efficient WCM has to manage working capital in such a way that it eliminates risks of default on payment of short-term obligations on one side and minimalizes the change of excessive levels of working capital on the other side (Eljelly, 2004). When a firm is determining a WCM policy, its faces a dilemma of achieving the optimal level of working capital, where the desired trade-off between liquidity and profitability is reached (Hill, Kelly & Highfield, 2010). This trade-off is a choice between risk and return. An investment with more risk will result in more return. Thus, a firm with high liquidity of working capital will have low risk and therefore low profitability. The other way around is when a firm has low liquidity of working capital, which result in high risk but high profitability. When determining a WCM policy, a firm has to consider both sides of the coin and try to find the right balance between risk and return.

Cash Management

Cash held in the most liquid form is a non-earning asset (Pandey, 2005). This is because cash in hand cannot generate interest. However, the firm requires holding an optimal cash balance since excessive cash means foregone interest income and inadequate cash means difficulty in implementing operating activities of an enterprise. Inadequate cash will also mean that the firm cannot meet its short term maturing financial obligations as and when they fall due. Any idle cash held by a firm should be converted into an earning form so that it can generate interest income. This is achieved through buying or investing in short term

marketable securities or investing the idle cash in short term lending.

Accounts Receivables

According to Dava, 2008 as cited in Kimeli (2010), the management of debtors is implemented through the formulation of sound credit policies. Debtors arise out of credit sales and the amount of debtors at any point in time is influenced by two factors: - The credit period granted to the debtors and the amount of credit sales (Debtors = Credit period x Annual Credit sales/365 days).

Accounts receivables or trade receivables which it sometimes called are the amounts a company has outstanding or the customers owe them where the company has delivered a good or service and given the customer an extending credit (Horngren, Sundem, Elliot, & Philbrick, 2012). In the world today most sales are through credit and this trend is growing. Credit sales make it challenging for companies to measure revenue and managing the assets. It is of importance that they manage the accounts receivables well so they receive their payments in time. The main benefit for companies to offer trade credit is that it can boost the sales of the company (Horngren et al, 2012). It is common that today's companies have large investments in receivables yet there is evidence that a lot of companies lack formal policies for how to manage their receivables and credit extension policy (Maness & Zietlow, 2005).

Account Payables

Accounts payable has an effect on company's cash flow and cash management. Managing short-term liabilities is challenging because usually companies are financing their short-term actions with short-term liabilities. Temporary short-term financing is used to provide funds for transient cash flow shortages, such as those caused by seasonality in sales. Some sources also mention permanent short-term borrowings; these are used by firms on an on-going basis and are refinanced with short-term debt as they mature. There is a benefit to use short-term financing, like the interest expense of short-term debt is less than it would be on long-term debt. (Vuorikari, 2012) Account payables are one of the short-term financing sources. Accounts payable are generated when firms purchase goods and services on credit. Account payable, also known as trade credit, usually creates the largest source of the company's short term financing. Using trade credit from the company's point of view as a way to finance the operations is the exact opposite of accounts receivables.

Return on Investment

According to Egbide (2009), profit is the excess of revenue generated by a firm over the cost that generated it within an accounting period. Furthermore, he opines that operational definition of profit is imprecise. Damilola, 2005 (cited in Egbide, 2009) submits that profit can be expressed as: profit before tax, profit after tax, gross profit, net profit, profit per share, return on assets and so on. Thus, this imprecision in the definition of profitability is a problem in financial management which needs serious attention. However, net operating profit is more appropriate for measuring corporate profitability because this is arrived at after all operating expenses have been deducted.

For a single-period review, divide the return (net profit) by the resources that were committed (investment):

Return on investment = Net income / Investment
where:
Net income = gross profit – expenses.
investment = stock + market outstanding + claims.

Or

Return on investment = (gain from investment – cost of investment) / cost of investment or

Return on investment = (revenue – cost of goods sold) / cost of goods sold

According to Kamal and Mohdzulkifli (2004), as cited in Noredi and Noriza (2010), profitability is used as a measurement for corporate performance because it evaluates the efficiency with which plant, equipment, and current assets are transformed into profit. The composition of assets and liabilities and decisions made concerning them are major determinants of profitability of any business (Egbide, 2009). Different measures of corporate profitability as used by previous researchers are as follows: return on investment (ROI), return on capital employed (ROCE), return on net worth (RONW), and return on sales, (ROS).

Relationship between Working Capital and Organizational Profitability

Profitability refers to the ability of an enterprise to generate profits from its investments. Working capital management affects profitability in several ways. The management of cash, account receivables and inventory affects the level of profits made by an enterprise. The excessive holding of inventory leads to high stock handling costs, deterioration in the value of inventory due to damage and obsolescence, theft or pilferage by employees and wastage. All these are cost to the firm which reduces its profitability. Holding a high level of inventories leads to high capital tied up in stocks. This tied up capital means lost profitability due to forgone interest income which would have been earned if the capital tied up in stocks were invested (Saleemi, 2009). Debtors' management policy adopted by a firm will also determine the cost of bad debts, debt administration, debt collection costs and the forgone benefits due to cash tied up in debtors. This may also include the cost of discounts which may be given to debtors to induce them to make prompt payments arising out of credit sales. Likewise all these costs will reduce the profitability of the firm (Manasseh, 2001). Defective cash management will lead high costs associated with holding cash, financial distress and lost investment income due hold cash in a non earning form. Examples of financial distress costs include interest costs, debt restructuring costs and legal costs. Likewise these costs will reduce the amounts of profits made by a firm as cited in Kimeli (2010).

Review of Empirical Literature

Several studies have been conducted on working capital management and profitability of firms and different conclusions were reached. Some studied only an aspect of the working capital components while others studied only the cash conversion cycle. These sets of studies however reported that working capital management may have an effect on a firm's profitability. Summing up, the issue has been well researched around the world. Some authors argue that there is a significant positive relationship between WCM and profitability, while others disagree. Most studies on Europe indicate that a firm can be more profitable if working capital is managed efficiently. Studies on India report mixed

findings, while those on Pakistan confirm the positive association. However, the issue remains open to further research.

Hina (2014) empirically test the impact of working capital management on profitability using secondary data from Glaxo Smith Kline pharmaceutical company registered in Karachi stock exchange for the period of 1996-2011. Regression statistical tool was employed in the study. The results of the research showed that there is a significant impact of the working capital management on profitability of company. In addition, the results indicate that through proper working capital management the company can increase its profitability. Amarjit, Nahum and Neil (2010) studied the relationship between working capital management and profitability in the United States with 88 American firms listed on the New York stock exchange for a period of 3 years (2005 - 2007). Their study indicated (i) a negative relationship between profitability (which they measured in terms of gross operating profit) and average days of account receivable and (ii) a positive relationship between cash conversion cycle and profitability. Mobeen and Naveed (2012) analyzed the effect of working capital management on firms' profitability in Pakistan between the period of 2004 and 2009 using textile, chemical, engineering and sugar and allied sectors i.e. the annual cross sectional data for those years were used. The data were analyzed using regression model and sensitivity analysis performed to test the robustness of the result. In the textile sector, the result of the analyses showed that ITID has a significant negative relationship with NOP; APP, CR and LOS have positive significant relationship with NOP. ACP and DR have an inverse relationship with NOP which is not even significant and as such, they were dropped from the model. For engineering and chemical sectors, the results are the same except that in the engineering sector, debt ratio has a significant negative relationship with net operating profit. Pouraghajan and Emamgholipourarchi (2012) empirically tested the impact of working capital management on profitability and Market evaluation of the Tehran Stock Exchange listed companies. Keeping in mind this objective, they studied a sample of companies during the years 2006 to 2010 registered in Tehran Stock Exchange and analyzed them. The estimated result of the research shows that there is a significant positive relationship between the effective working capital management and profitability of company. Napompech (2012) reviewed the impact of working capital management on profitability.. The regression analysis was calculated on a panel sample of 255 companies listed on the Stock Exchange of Thailand from 2007 to 2009. Therefore, the results showed an inverse relationship between the operating profits and inventory conversion period and the receivables collection period. Qazi, Fred, Vivian & Godswill (2011) also explored the impact of working capital on firms' profitability in Pakistan using 20 companies in the automobile and oil and gas sectors, from 2004 – 2009. In the study, panel data regression analysis and time series of data were taken. The pooled data were analyzed using regression and correlation model assisted by E – views software and the result revealed that networking capital has strong and positive relationship with profitability while number of days account receivable and inventory turnover in days have weak positive relationship with profitability. Magpayo (2009) study determined the effect of working capital management policy and financial leverage on financial performance. Pearson rank correlations, ANOVA test and multiple regression analysis were performed. The result of the study shows that working capital management policy of firms, their financial leverage and size have significant relationship with net income, return on equity and return on assets. While working capital management policy and firm's size have positive effect on net income, financial leverage has a negative effect on net income and a weak positive effect on return on equity. Malik, Waseem, & Kifayat (2012) empirically tested that effective Working capital management is very important for the success of a business because it has a direct positive impact on the profitability of the business. Findings of the study demonstrate that there is a strong positive relationship between profitability and cash, accounts receivable and inventory; but there is a negative relationship between profitability and accounts payable. Rehman and Anjum (2013) empirically examined the effects of working capital management on the profitability of Pakistan cement industry. Secondary Data was collected from annual reports and the sample size is 10 consisting of Pakistan cement companies listed in KSE from 2003-2008. The result accepts the hypothesis that there is a positive relationship between working capital management and profitability on the cement sector of Pakistan. Furthermore, Nobanee, Abdullatif and AlHajja, (2011) investigated the relationship between working capital management and profitability of a sample of 2123 Japanese non-financial firms listed in the Tokyo Stock Exchange for a period of 15 years (1990-2004). They found that managers can increase profitability of their firms by shortening the cash conversion cycle, the receivable collection period and the inventory conversion period as well as lengthening the payable deferral period. Rahman (2011) carried out a study which examines the relationship between profitability and working capital management of textiles Industries. The study reveals that positive relationship exists between working capital management and profitability, but the textile industry is not showing working capital management efficiency. Sushma, Vishani and Falore and Ajilore (2009); examined the effects of working capital management on profitability performance for a panel made up of sample of Nigerian quoted non-financial firms for the period of 1996-2005. The study utilized paned data econometric in a pooled regression, where time-series and cross-sectional observations were consumed and estimated. The study found that a significant negative relationship between net operating profitability and the average collection period, inventory turnover in days, average payment period and cash conversion cycle for a sample of fifty Nigerian firms listed on the Nigerian Stock Exchange. In Nigeria, Egbide (2009) studied the relationship between the components of working capital and profitability measured by Return on assets using a sample of 25 non-financial firms for 2005 and 2006 period and found out that only debtor's collection period has a significant negative association with profitability while inventory turnover, cash conversion and creditors payment period has a significant positive relationship with profitability. Falope and Ajilore (2009) utilized panel data econometrics in a pooled regression, where time-series and cross-sectional observations were combined and estimated. They found a significant negative relationship between net operating profitability and the average collection period, inventory turnover in days, average payment period and cash conversion cycle for a sample of fifty Nigerian firms listed on the Nigerian stock exchange. Dong and Su (2010) studied the

relationship between working capital management and profitability. Secondary data was obtained from the financial statements of the firms were used in the study multiple regression analysis was employed to analyzed in the study to analyzed the data. The study finds that there is a strong negative relationship between profitability, measured through gross operating profit and cash conversion cycle. Yusuf, (2014) provided an analysis on the concept and propose framework that emphasizes on investigating the impact of management of working capital on the profitability of manufacturing companies listed on the Nigerian stock exchange. The study used regression statistical tool in analyzing the data. The study found that optimum inventory levels depend on sales, so sales must be forecasted before target inventories can be established. The study of Osundina (2014) investigated the relationship between working capital management measured by aggressive investment policy (AIP), account collection period (ACP), inventory conversion period (ICP), average payment period (APP), cash conversion cycle (CCC) and net operating profit of quoted food and beverages manufacturing firms in Nigeria. Survey research design was employed using primary data. Regression analysis (OLS) was used to establish the relationship. It was found that working capital management had significant positive relationship with profitability; cash conversion cycle and aggressive investment policy had insignificant positive relationships with profitability. Deloof (2006) examined the relationship between working capital management and profitability for a sample of 2,000 Belgian financial firms. The relationship was found to be positive. He measured the profitability by the gross operating income, and working capital management by the cash conversion cycle. Lazaridiz and Tryfonidis (2006) studied the relationship between working capital management and profitability of listed banks in the Athens stock exchange. The relationship was found to be positive. They measured gross operating profit and the cash conversion cycle. Uyar (2009) found a significant negative correlation between cash conversion cycle and firm size as well as with profitability among Turkey firms using ANOVA and Pearson Moment Correlation. Padachi (2006) uses a set of 58 small manufacturing firms in Mauritius with 340 firm-year observations from 1998 to 2003. The study confirms that firms with more receivables and higher levels of inventory are less profitable. The author conducts a comparative analysis of five major industry groups, and asserts that working capital has a negative correlation with ROA.

Eljelly (2004) elucidated that efficient liquidity management involves planning and controlling current assets and current liabilities in such a manner that eliminates the risk of inability to meet due short-term obligations and avoids excessive investment in these assets. The relation between profitability and liquidity was examined, as measured by current ratio and cash gap (cash conversion cycle) on a sample of joint stock companies in Saudi Arabia using correlation and regression analysis. The study found that the cash conversion cycle was of more importance as a measure of liquidity than the current ratio that affects profitability. The size variable was found to have significant effect on profitability at the industry level. Hayajneh (2011), carried out a study on the impact of working capital efficiency on profitability of Jordanian manufacturing firms analyzed the panel data through descriptive statistics, Pearson correlation coefficients, ordinary least squares (OLS) and two stage least squares(2SLS) regressions model. The results of study found a negative significance relationship between profitability and the average receivable collection period, average conversion inventory period and average payment period, and also the cash conversion cycle which expresses the efficiency of working capital. This study revealed a positive significance between the size of the firm, growth of sales and current ratio from this side and profitability from other side. Afza and Nazir (2009) made an attempt in order to investigate the traditional relationship between working capital management policies and a firm's profitability for a sample of 204 non-financial firms listed on Karachi Stock Exchange (KSE) for the period 1998-2005.The study found significant difference among their working capital requirements and financing policies across different industries. Moreover, regression result found a negative relationship between the profitability of firms and degree of aggressiveness of working capital investment and financing policies. Bratland and Hornbrinck (2013) investigated what impact the working capital policies have on the stock performance on the Swedish stock market during the years 2009-2012. As statistical test the Pearson's correlation was used to find if there is and correlation between working capital and stock return, beta and standard deviation. The results of this study show no clear relationship between Swedish firm's working capital policy and the stock return. Naseem (2011) research objective was to provide the empirical evidence about the impact of working capital management on the profitability of a sample of manufacturing firms in Pakistan. With that in mind, he picked 10 cement manufacturing companies covering the period of 2005-2009. He found that there is a potential linkage between working capital and profitability in manufacturing firms. The results showed that there is an effect of size of the firm on the profitability, and no any impact of other variables. Usama (2012), selected the other food sector and selected the data from 2006-2010 of 18 companies of this sector listed on Karachi stock exchange. He examined the effect of different variables of working capital management, average collection period, average payment period, inventory turnover in days, cash conversion cycle, debt ratio, financial asset to total asset ratio, current ratio and net operating profitability. Pooled least square regression and common effect model was used. It was found that there is significant positive effect of working capital management on profitability and liquidity of the firms. The study of Shahid (2011) explores the association between working capital management and the profitability of textile firms in Pakistan. A balanced panel dataset covering 160 textile firms for the period 2000–05 was analyzed and estimated an ordinary least squares model and a fixed effect model. Return on assets is found to be significantly and negatively related to average days receivable, positively related to average days in inventory, and significantly and negatively related to average days payable. Also, return on assets has a significant positive correlation with the cash conversion cycle, which would suggest that a longer cash conversion cycle is more profitable in the textiles business. The works done by Nzioki and Kimeli (2013) analyzed the effects of working capital management on the profitability of manufacturing firms listed on the Nairobi securities exchange. Multiple regression and correlation analyses were carried out to determine the relationships between components of working capital management and the gross

operating profit of the firms. The results from the study revealed that gross operating profit was positively correlated with average collection period and average payment period but negatively correlated with cash conversion cycle. The relationship between inventory turnover in days and gross operating profit was insignificant. Mehmood (2012) examined the impact of working capital on firm's profitability using a case study of sugar and leather study of Pakistan. The findings of the study were that the key variable like current asset is negatively correlated to the firms' profitability and the acid test ratio has a positive effect on company's liquidity. Raheman and Nasr (2007) studied working capital management and profitability. They selected a sample of 94 Pakistani firms listed on Karachi stock exchange for a period of 6 years from 1999 – 2004. Pearson's correlation, and regression analysis (Pooled least square and general least square with cross section weight models) are used for analysis. The results show that there is a strong negative relationship between variables of the working capital management and profitability of the firm.

Previous studies have come to the conclusion that a well-managed working capital leads to increased profitability Raheman and Nasr (2007), Sahid (2011Afza and Nazir (2009), Hayajney (2011), Egbide (2009), Falope (2009), Yusuf (2014) amongst others found a negative impact, while Pouraghajan (2012), Osundina (2014), Mathuva (2010), Akinlo (2007), Sarbapriya (2011), Rahman (2011), Deloof (2006), Lazaridiz (2012) amongst others found a positive impact. Sushma (2007) found no impact, yet some authors like Khan, et al (2012) and Napompech (2012) found an inverse relationship between working capital and profitability. The authors are more of foreign (international authors) than local (Nigerian). They all provide a solid base and give the idea regarding working capital management and its components. They also give us the results and conclusions of their studies carried out on the same area for different countries and environments. On the basis of these researches done in different countries, we have developed our own methodology for research.

From the various literature reviewed, the authors and researchers explained the importance of working capital in profit making organizations. With all these studies no known study to the research is yet to investigate the present efficiency of management of working capital among manufacturing companies in Nigeria. This gap is intended to be filled by the findings of this study.

METHODOLOGY

Research Design

In carrying out this study, the researcher adopts the *expo-facto* research design. This design is adopted because it seeks to establish the factors that are associated with certain occurrence or type of behaviour by analyzing past events of already existing condition (Simon & Goes, 2013). Here the researcher has no control over certain factors or variables as the events already exist and can neither be manipulated or changed.

Population of the Study

The population of this study consists all the 20 basic material manufacturing companies quoted in Nigerian Stock Exchange market were adopted for the study.

Sample Size and Technique

The study adopted stratified and simple random sampling technique drawn from six (6) manufacturing companies from the population of companies in the basic material manufacturing Industry in Nigeria. In drawing these companies, the stratified sampling technique was adopted in categorizing these companies into their production category which majorly includes chemicals and paints, Industrial and domestic products companies. Two companies each was selected from the three sectors which made the researcher to arrive at randomly selecting, Berger Paints Plc. and Chemicals and Allied Product (CAP) Plc. from the Chemicals and Paints Companies, B.O.C. Gases Plc. and First Aluminium Nigeria Plc. from Industrial Product Companies while Dangote Cement Plc and Ashaka Cement Plc were selected from Domestic Products Companies.

Method of Data Analysis

The researcher carried out a stationarity test on the data collected for the study. This test helped in ascertains the reliability of the data adopted for the study in future prediction of event under description. Therefore, the Augmented Dickey-Fuller test (ADF) of unit root test is conducted to determine the stationarity of the data adopted. The augmented Dickey-Fuller (ADF) statistic used in the test is a negative number. The more negative it is, the stronger the rejection of the hypothesis that there is a unit roots at some level of confidences.

The ordinary least square (OLS) statistical tool is used to test the relevant hypotheses of the study via the Statistical Package for Social Sciences (SPSS). An econometric model was formulated based on each respective variable (dependent and independent variables). The dependent variable is return on investment (ROI) which is calculated by Net Operating Profit divided by capital employed while the independent variables include debtors (debtors cost) (DC), inventory (inventory cost) (IC), creditors (creditors cost) (CC).

Model Specification

The study adapted the multiple regression model used by Falope and Ajilore (2009) and Dong and Su, (2010). The model used by those researchers for their studies is stated as follows:

$ROA = B_0 + B_1 (ACR) + B_2 (INVB) + B_3 (CCC) + B_4 (SG) + ei$

Where:

ROA = Return on Assets
ACR = Account Receivable period
INVR = Inventory period
CCC = Cash Conversion Cycle
SG = Sales growth

ei = Random error term which take care of effects of other factors which are not fixed in the model, on dependent variables
B_0 = Regression Constant

B_1, B_2, B_3, B_4 are the regression co-efficient associated with independent variables.
The model was modified in this study as follow:
ROI = $B_0 + B_1$ DC + B_2 IC + B_3 CC +ei
Where
RO_1 = Return on investment
B_0 = Constant of the model
B_1- B_3 = Coefficient of the model
DC = Debtors cost
IC = Inventory cost
CC = Creditor cost
ei = Error term.

Decision Rule
The null hypothesis is rejected if the f calculated is greater than the f critical and if otherwise we accept the null hypotheses.

PRESENTATION AND ANALYSIS OF DATA
Presentation of Summary of ADF Test Statistics Results

Table .1 below shows the result of the unit root test conducted to determine the stationarity of the data adopted for the study.

Table.1: Result Summary of Unit Root Test
Trend and Intercept @ 1 per cent, 5 per cent, and 10 per cent level of significance

SER	ADF Test Statistic	1per cent critical values	5 per cent critical values	10 per cent critical values	Order	Remarks
LROI	0.024441	-3.6576	-2.9591	-2.6181	1(0)	Stationary
LDC	0.067614	-3.6576	-2.9591	-2.6181	1(0)	Stationary
LIC	0.007113	-3.6576	-2.9591	-2.6181	1(0)	Stationary
LCC	0.125205	-3.6576	-2.9591	-2.6181	1(0)	Stationary

Source: Researcher's Compilation from E-View (Appendix 3)

The value of the ADF Test result of Return on investment all the component of working capital data adopted for the study is stationary as remarked in the table above. The stationarity of the series can strongly influence the behavior and properties of working capital component on the return of investment of basic materials manufacturing companies in Nigeria.

Hypotheses Testing and Analysis
The hypotheses were tested with Ordinary Least Square (OLS) regression with the aid of Special Package for Social Sciences (SPSS) version 16.

Hypothesis One
H_0: Account receivable as a component of working capital does not have any significant influence on return on investment of basic material manufacturing companies in Nigeria.

Table 4.3.1.1: showing Model Summary of Hypothesis one

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.229[a]	.053	-.020	.06992
A. Predictors: (Constant), Debtors Cost				

Table 4.3.1.1 shows a positive relationship of .229 between debtors cost and return on investment of basic materials manufacturing companies in Nigeria, while the 5.3 per cent (r^2 .053) show that debtors cost has 5.3 per cent impact on return on investment of basic materials manufacturing companies in Nigeria.

Table 4.3.1.2: showing ANOVA result of hypothesis one

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.004	1	.004	.721	.411[a]
	Residual	.064	13	.005		
	Total	.067	14			
A. Predictors: (Constant), Debtors Cost						
B. Dependent Variable: Return on Investment						

Table 4.3.1.3: showing Coefficients determinants of hypothesis one

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.024	.139		-.171	.867
	Debtors Cost	5.924E-8	.000	.229	.849	.411
A. Dependent Variable: Return on Investment						

Hypothesis Decision

Table 4.3.1.3 shows a value of .411 above the traditional significance value of 0.05 which means that debtors cost is not significant to return on investment of basic materials manufacturing companies in Nigeria. Also considering the f-value of .327 on table 4.3.1.3 greater than the t-value of -1.117 on table 4.3.1.3, the null hypothesis is therefore accepted to the effect that, debtors cost does not have significant relationship with return on investment of basic materials manufacturing companies in Nigeria.

Hypothesis Two

H_0: Inventory as a component of working capital cannot significantly improve return on investment of basic materials manufacturing companies in Nigeria.

Table 4.3.2.1: showing Model Summary of hypothesis two

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.396[a]	.157	.092	.06595
A. Predictors: (Constant), Inventory Cost				

Table 4.3.2.1 shows a positive relationship of .396 between inventory cost and return on investment of manufacturing companies in Nigeria, while the 15.7% (r^2 .157) shows that inventory cost has 15.7% impact on return on investment of basic materials manufacturing companies in Nigeria.

Table 4.3.2.2: Showing ANOVA result of hypothesis two

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.011	1	.011	2.425	.143[a]
	Residual	.057	13	.004		
	Total	.067	14			
A. Predictors: (Constant), Inventory Cost						
B. Dependent Variable: Return on Investment						

Table 4.3.2.3: Showing Coefficients determination of hypothesis two

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.004	.065		-.067	.948
	Inventory Cost	3.114E-8	.000	.396	1.557	.143
A. Dependent Variable: Return on Investment						

Hypothesis Decision

From the significance value of the t-value on table 4.3.2.3 also shows a significance value of .143 greater than the traditional significance value of 0.05 which means the inventory cost is not significant to return on investment of basic materials manufacturing companies in Nigeria. The value of the f-value of 2.425 on table 4.3.2.2 which is above the t-value of 1.557 on table 4.3.2.3 does not have effect on the significance. Considering the significance value, the null hypothesis is therefore accepted to the effect that, inventory does not have significant relationship with return on investment of basic materials manufacturing companies in Nigeria.

Hypothesis Three

H_0: Account payable as a component of working capital does not have any significant impact on return on investment of basic materials manufacturing companies in Nigeria.

Table 4.3.3.1: Showing Model Summary of hypothesis three

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.136[a]	.019	-.057	.07117
A. Predictors: (Constant), Creditors Cost				

Table 4.3.3.1 shows a positive relationship of .136 between creditors and return on investment of basic materials manufacturing companies in Nigeria, while the 1.9% (r^2 .0.19) shows that creditors has 1.9% impact on return on investment of basic materials manufacturing companies in Nigeria.

Table 4.3.3.2: Showing ANOVA result of hypothesis three

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.001	1	.001	.246	.628[a]
	Residual	.066	13	.005		
	Total	.067	14			
A. Predictors: (Constant), Creditors Cost						
B. Dependent Variable: Return on Investment						

Table 4.3.3.3: Showing Coefficients determinants of hypothesis three

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.078	.037		2.105	.055
	Creditors Cost	4.689E-9	.000	.136	.496	.628
A. Dependent Variable: Return on Investment						

Hypothesis Decision

Table 4.3.3.3 shows a significance value of .628 greater than the traditional significance value of 0.05 which means the creditors cost is not significant to return on investment of basic materials manufacturing companies in Nigeria. The f-value of 0.246 on table 4.3.3.2 greater than the t-value of 0.496 on table 4.3.3.3 does not support the significance value. From the significance value, the null hypothesis is therefore accepted to the effect that, creditors have no significant relationship with return on investment of basic materials manufacturing companies in Nigeria.

Discussion of findings

From the result of the tested hypotheses, it was observed that cost of debtors have no significant relationship with return on investment of basic materials manufacturing companies in Nigeria. This finding is in line with the discovery of Ghosh and Maji (2003) that discovered in the study inefficiency in management of working capital management among Indian companies. Although study from Pakistiani by Raheman and Nasr (2007) between 1999-2004 among 94 quoted Pakistiani firms shows efficiency in management of working capital.

Also, findings shows that inventory have no significant relationship with return on investment of basic materials manufacturing companies in Nigeria. This findings deviate from the discovery of Raheman and Nasr (2007) who discovered relationship between inventory turnover and turnover of Pakistiani firms. This means that manufacturing firm in Nigeria are improving in inventory management.

Final findings from the study also show that creditors have no significant relationship with return on investment of basic materials manufacturing companies in Nigeria. This finding deviates from the discovery by Hina (2014) a significant impact of the working capital management on profitability of company. Lazaridi and Tryfonidis (2006) also argued that trade creditors mitigate weak creditor protection and imperfect information better than formal lenders and find that firms in countries with less developed financial markets use informal credit provided by their suppliers to finance growth.

Therefore, The findings of the study shows that management of debt among basic materials manufacturing companies in Nigeria has been effective which has not had negative effect on the return on investment which is a major indicator of financial performance of manufacturing companies in Nigeria.

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

Summary of Findings

Findings from the study show that:

1. Debtors have no significant relationship with return on investment of basic materials manufacturing companies in Nigeria. This finding indicates that management of debt as a component of working capital in manufacturing companies in Nigeria has been efficient.
2. Inventory has no significant relationship with return on investment of basic materials manufacturing companies in Nigeria. This finding also indicates that manufacturing companies have been efficient in management of its working capital in the areas of its investment with no significant relationship found with return on company investment.
3. Creditors have no significant relationship with return on investment of basic materials manufacturing companies in Nigeria. This final finding also indicates that manufacturing companies in Nigeria are efficient in management of it credit facilities.

Conclusion

The study concludes that management of debtors of basic materials manufacturing companies in Nigeria is efficient in management of their debt which has improved return on investment of the basic materials manufacturing companies. The study also concludes that inventory management in basic materials manufacturing companies in Nigeria has been efficient which has reduced its impact on return on investment of manufacturing companies in Nigeria. Finally, it was concluded creditors has been efficiently managed among basic materials manufacturing companies in Nigeria.

Recommendations

The study recommends in line with the findings of the study that;

1. Managers of manufacturing companies in Nigeria should ensure that debts profile are kept with measures that will not put the operations of basic manufacturing companies in Nigeria at risk so as to improve in its managements of debts and as well increase in the financial performance which will repose investors' confidence to improve their investment in this industry.
2. Managers should also ensure to continuously check its inventory items so as not to have negative consequences on the financial performance of manufacturing companies in Nigeria.
3. Managers of manufacturing companies in Nigeria should also ensure proper check of the credit facilities so as not

to acquire non-working capital liability that might place burden on the financial performance of corporate organizations in Nigeria.

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