

**EFFECT OF WORKING CAPITAL MANAGEMENT ON  
FINANCIAL PERFORMANCE OF MANUFACTURING FIRMS  
LISTED AT NAIROBI SECURITIES EXCHANGE**

**VINCENT MAKAU MUIA**

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**DECLARATION**

This research project is my own original work and has not been presented for a degree in any other University.

**Vincent Makau Muia**

**MBA/5976/014**

Signature.....Date.....

This research project has been submitted for examination with our approval as  
University  
Supervisors.

Signature.....Date.....

**Banafa Ali. (Ph.D.)**

**Technical University of Mombasa.**

Signature.....Date.....

**Jean Uzel. (Ph.D.)**

**Technical University of Mombasa.**

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## **DEDICATION**

This work is dedicated to my entire family and friends for their prayers and immense support wherever they are.

## ABSTRACT

The main objective was to research about the effect of working capital management on the financial performance of firms listed at the NSE, Kenya. The specific objectives of this study were to determine the effects of average payment period, inventory conversion period, leverage and average collection period on financial performance of listed manufacturing firms at NSE. Firm performance was measured using return on assets. Descriptive research design was used. The target population was all the 9 manufacturing Companies that appear at Nairobi securities exchange Hand book covering the period 2011-2015. A census of the 9 firms listed manufacturing on the NSE, Kenya was the sampled. This research project applied secondary data for cycle stretching from 2011 to 2015. The collected data was coded into the SPSS. Multiple regression was applied. By use of Pearson's correlation, Return on Assets was positive related to Average Payment Period, Inventory Conversion Period and Average Collection Period. Results indicated negative relationship between return on assets and Leverage. Regression model revealed positive relationships among Average Payment Period, Inventory Conversion Period and leverage. There was negative and significant relationship between Average Collection Period and return on assets. Therefore, regression model was used to address the research hypothesis. It was found that there was no significant effect of average payment period on financial performance and there was no significant effect of leverage on financial performance. The other two null hypotheses were accepted at 95%. Results concluded if huge capital amount is well managed it will have significant effect organizational performance of those listed companies. Researcher recommended financial manager should extend the repayment period to retain the funds in the firm so as to utilize the cash on other financial investment. Also financial manager should apply techniques to strengthen their collection procedures to shorten credit terms to their customers in order to keep the cash conversion cycle short.

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## **LIST OF ABBREVIATIONS**

<b>APP</b>	Average Payment Payables.
<b>ACP</b>	Average Collection Period
<b>APP</b>	Average Payment Period
<b>AR</b>	Accounts Receivables.
<b>CCC</b>	Cash Conversion Cycle.
<b>ICP</b>	Inventory Conversion Period
<b>NSE</b>	Nairobi Securities Exchange.
<b>NTC</b>	Net Trade Cycle.
<b>ROA</b>	Return on Asset.
<b>WCM</b>	Working Capital Management.
<b>WIP</b>	Work-in- Progress.

## **DEFINITION OF TERMS**

### **Cash Conversion Cycle**

This is a complete circle of time period in form of days that takes resources to be converted to liquid cash (Elmore, 2011)

### **Accounts Payable**

This is what the business has taken from suppliers with the understanding to pay back at an agreed period, the cost of the goods and services (Schaeffer, 2006).

### **Working Capital**

This is surplus cash for the business to use and is described as net asset. Available for the business utilization and appears as current liabilities on the balance sheet (Marco, 2014)

### **Working Capital Management**

Polices put in place by the companies on the utilization of the surplus funds within a calendar period (Garcia 2011).

### **Accounts Receivable.**

This is an asset for the business who sold their goods to their customer repayment to be made on a specific time period (Belverd, 2010).

### **Average Collection Period**

Is the projected time which company can take collect accounts receivable from customers (Belverd, 2010).

**Liquidity** This is described as a firm's financial ability to pay their liabilities at short time notice. The liquidity position is said to be sound if it can cover two times the company's liability (Garcia, 2011).

### **Inventory Turnover**

This is a process whereby a measure is put in place to account in terms of days a company takes to consume the stock and its replacement (Deloof, 2003).

### **Financial Performance**

Is the extent to which a company can use assets from its initial mode of commercial and make incomes (Belverd, 2010).

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.0 Background of the Study**

Many researchers in business industries have undertaken studies relating to the financial decision making on capital investment that have influence on dividend policies and appraisal, organizational capital structure, organization asset mixture amongst others (Garcia & Martinez, 2003). The business sector is highly volatile and quite competitive which have direct impact on company's performance. Most research study examined on liquidity of companies (Melita *et al.*, 2010). Since basically research studies emphasized on liquidity and profit per say, this has triggered more researchers to pay attention on the management of liquidity, which is simply the Net asset of the company. According to Tharshiga (2013), WCM is a significant part of company finances reason being that financial performance is directly influenced by liquidity of firm. Working Capital is composed of two dimensions; the gross working capital which represents organization's investments as current asset and NWC (net working capital) whereby its given by the current asset less current liability (Pandey, 2011). Marco (2014) notes that an effective instrument for defining the efficiency of working capital management (WCM) of an organization is cash conversion period which determines the liquidity and profitability of the organization. Stating this popularity, academics have started paying more attention on cash conversion period as mechanism for predicting the company outcomes into the respect to the cash flow of the organization. Researches about this correlation showed cash conversion cycle gave more returns in both big companies (Lazaridis & Tryfonidis, 2006). These findings has made cash conversion period as main organizational mechanism which can be used for advance research, particularly about

financial performance of companies. The levels of accounts receivable, accounts payables and inventories materially impact the liquidity situation of the company which in turn affects financial performance of the company. This will be termed as profitability of the firm and has to be looked upon by working on return on assets (ROA).

One measurement on company's effective WCM and especially the cash management, cash conversion period have been proved as a very important aspect in the study. Richards and Laughlin (2008), based on traditional concept about the cash conversion period having a well working management principle, it is a good measure for helping to understand how a company is handling its WC. When the cash conversion period of a company is short, indirectly relates to the worth of the firm and this means that it is using less time collect accounts receivable and taking more days in making their payables to suppliers. This can translate to comparatively high NPV (Net Present Value) about the cash flow and comparatively huge company's valuation.

Nyabwanga, Ojera, Lumumba, Odondo & Otieno (2012) assessed the effect of working capital management practices on the financial performance of SSEs in Kisii South District. A sample of 113 SSEs comprising 72 trading and 41 manufacturing enterprises was used. Pearson's correlation coefficients and multiple regression analysis techniques were used to analyze data. Consequently, the findings of the study were that, working capital management practices were low amongst SSEs as majority had not adopted formal working capital management routines and their financial performance was on a low average.

## **1.2 Statement of Problem**

Firms have always faced the challenge of management of their working capital and this has been due to most previous researches were focused on the liquidity per say. However the need to research about the significance of WCM has been critical since wrong policies on WCP can have negative impact on the financial presentation of the firm. Marco (2014) noted that, one has to study the cash conversion period in defining the proficiency of WCM of manufacturing company. This is because CCC reveals the efficiency of the firm in spirit that inventories are transformed into sales, accounts receivables collected from debtors and making payments of accounts payables.

Mark (2003) researched about the connection between WCM and financial performance of the firm and sampled 1009 Belgian firms during the cycle of 1992 to 1996 and used days of receiving receipts, inventories and payable accounts as commercial credit criteria and good inventory procedures. The cash conversion period was also used as a whole measure for WCM. The results specified that finance managers can increase the organizational performance of the business units through dipping processes of incoming overdue accounts and inventories and similarly, reducing the cash conversion period will increase the company's value.

It is apparent from the studies above which have been previously carried out by researchers and did not find out same outcomes on the correlation between the WCM and the company's financial performance. These studies noted contradictory results. Duplication of outcome from associated researches carried separate from this sector was difficult reason being their outcomes vary considerably. Therefore, researcher carried out this researches to explore effects of WCM on financial performance of listed manufacturing firms at NSE, Kenya.



### **1.3 Objectives of the Study**

#### **1.3.1 General Objective**

The overall purpose of this research was to examine the effect of working capital management on the financial performance of listed manufacturing firms at NSE, Kenya.

#### **3.1.2 Specific Objectives**

Specific objectives were:

- i. To assess the effects of Average Payment Period on financial performance of the listed manufacturing firms at NSE, Kenya.
- ii. To determine the effects of Average Collection Period on financial performance of the listed manufacturing firms listed at NSE, Kenya.
- iii. To establish the effect of Inventory Conversion Period on financial performance of the listed manufacturing firms at NSE, Kenya.
- iv. To examine the effect of leverage on financial performance of the listed manufacturing firms at NSE, Kenya.

### **1.4 Research Hypotheses**

Following research hypotheses were used:

- i)  $H_{01}$ : There is no statistically significant effect of average payment period on financial performance of the firm at Nairobi Securities Exchange in Kenya.
- ii)  $H_{02}$ : There is no statistically significant effect of Average Collection Period on financial performance of the firms at NSE, Kenya.
- iii)  $H_{03}$ : There is no statistically significant effect of inventory conversion period on financial performance of the firms at NSE, Kenya.

- iv) H<sub>04</sub>: There is no statistically significant effect of leverage on financial performance of the firms at NSE, Kenya.

### **1.5 Significance of the Study**

The research outcomes might assist financial executives to come up with enhanced WCM policies on organizational financial of listed companies at NSE. So as to increase on profitability of the manufacturing companies. This study can also add value to the previous writings by investigating the effect of WCM on the financial performance of listed manufacturing companies by corroborating the outcomes of past researches highlighted in the literature.

### **1.6 Scope of the Study**

This research intended to examine the effect of WCM on financial performance of listed manufacturing companies. Population of all nine listed manufacturing companies was the range and a census of all companies listed at the NSE from period of 2011-2015 was sampled. This was the period when the economy was stable and bank rates were not reviewed and this shows the data for the five years was dependable.

### **1.7 Limitations of the Study**

The investigator had serious challenge of financial constrained, since the research study required frequent travel to Nairobi at Nairobi Securities exchange for reliable data. This challenge was mitigated by securing financial aid from my relatives and friends. Validity of data was a challenge as far as financial statement are concerned and this was solved by comparing audited data and information on NSE Handbook 2015 December.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This draws interrelated material from different studies carried out in the past and in different areas. This chapter comprises of Theoretical Framework, The conceptual framework, Critique of the existing literature relevant to the study, Research gaps and Summary of Literature review on the effect of WCM of financial performance on listed manufacturing firms on NSE.

#### **2.2 Theoretical Framework**

From theories one gets general explanation about a phenomenon. The framework controls the study by defining the units to be studied and what kind of relationship will be looked at. Therefore theoretical literature assists the researcher to understand the framework for data; and supports in the selection of applicable study design. The following three theories were selected and this is because first theory, Free Cash Flow Theory, talks about the surplus cash in the organization and how it affects profitability. The second theory, Risk and Return Theory explains hoe investors make decisions based on the risk versus profit of the project. Third theory, The Operation and Cash Conversion Cycle Theory describes how short – term assets and liabilities need to be managed and hoe collection policy need to be made. Therefore, these three theories are very important in study working capital management.

##### **2.2.1 Free Cash Flow Theory**

Firms which have surplus cash flows than the required amount to run the Company's operations is bound to trigger interest of conflict concerning the financial managers and shareholders due to the temptations caused by the extra cash flow as hypothesizes Jensen (2006). Surplus cash flows that exceeds the demand for the needs of the firms

positive NPV when discount is given at the appropriate cost of capital determines open cash flow. The expectation of shareholders is to earn the reward from their investment in form of dividends, and such fund is what is derived from open cash flow. Yet when shareholders are paid the dividends this act reduces the capacity of the Managers control of the funds, thus triggers the conflict of interest.

Funding projects using internal funds further evades the control of funds by the managers and scope the excess funds making it to more expensive if available which is termed as explicit cost. The main role of financial managers is maximize shareholder's wealth through increasing firm's size. When the firm increases in terms of size managers inspiration is also increased and this is because assets under control is more. Management is rewarded positively as a result increased development. Organizational bias is created or encouraged when there is reward of middle managers through promotion may be based on price systems rather than year-year bonuses (Black 2002). This links average payment period with WCM in that managers need to invest the surplus cash so as to increase profitability of the firm. For a financial manager to over invest the available resources he has to put into consideration of factor market and competition in the product in terms of values concerning the minimum normal price in an activity. Managers need to motivate organization they are representing to become more efficient such that the survival probability of the firm is increased.

### **2.2.2 Risk and Return Theory**

In studying portfolio management field, Risk and Return Theory is among the significant concepts to be explored. (Mukherji, Desai & Wright, 2008) noted that a correlation has been received by the Risk and Return Theory from the researchers in the fields of business and economics. To make any good investment decision, investor

should base his argument on Risk and Return Theory (Richard, 2008). Investment are always associated with risk and this has been looked into two approaches that is the risk-seekers and risk averters. Risk seeking investors have strong view of appraising gains although their choices involves huge losses or higher likelihood of making a loss but they are that high risk investments have higher returns. Risk takers only projects on gains (Tiegen & Brun, 2007). This theory is linked with inventory conversion period in that many risks are involved during processing and therefore some investors prefer what they are sure off.

In studying WCM, consideration of relationship between liquid state and profit of a firm need to be stressed and this done by incorporating the Risk and Return Theory in WCM. When a firm makes decision to remain liquid it does so at cost of profit and vice-versa. These two decisions which are inconsistent may lead to either surplus or lack of the constituents of working capital. To link risk and return theory to the WC (working capital) we examine the capability finance manager of a firm to decide about the pool of resources to be attained and this is because it is hard to own everything required to run the organization and this means a composition of accounts receivables, inventories and stock against profitability need to be decided within the risk and return theory.

### **2.2.3 The Operating Cycle Theory**

Researching on working capital management, researchers can have good knowledge from the operating cycle theory. This theory is amongst good methods of studying WCM (working capital management). The link is between average collection period with financial performance in that accounts receivables the cycle starts from the time the raw materials is received and ends when account receivable is collected from debtors. A simple approach is relied on current ratio as solvency pointer is fairly

undependable when is equated to the operating cycle approach whereby there is integration between inventory turnover and accounts receivables as far as liquidity management is concerned.

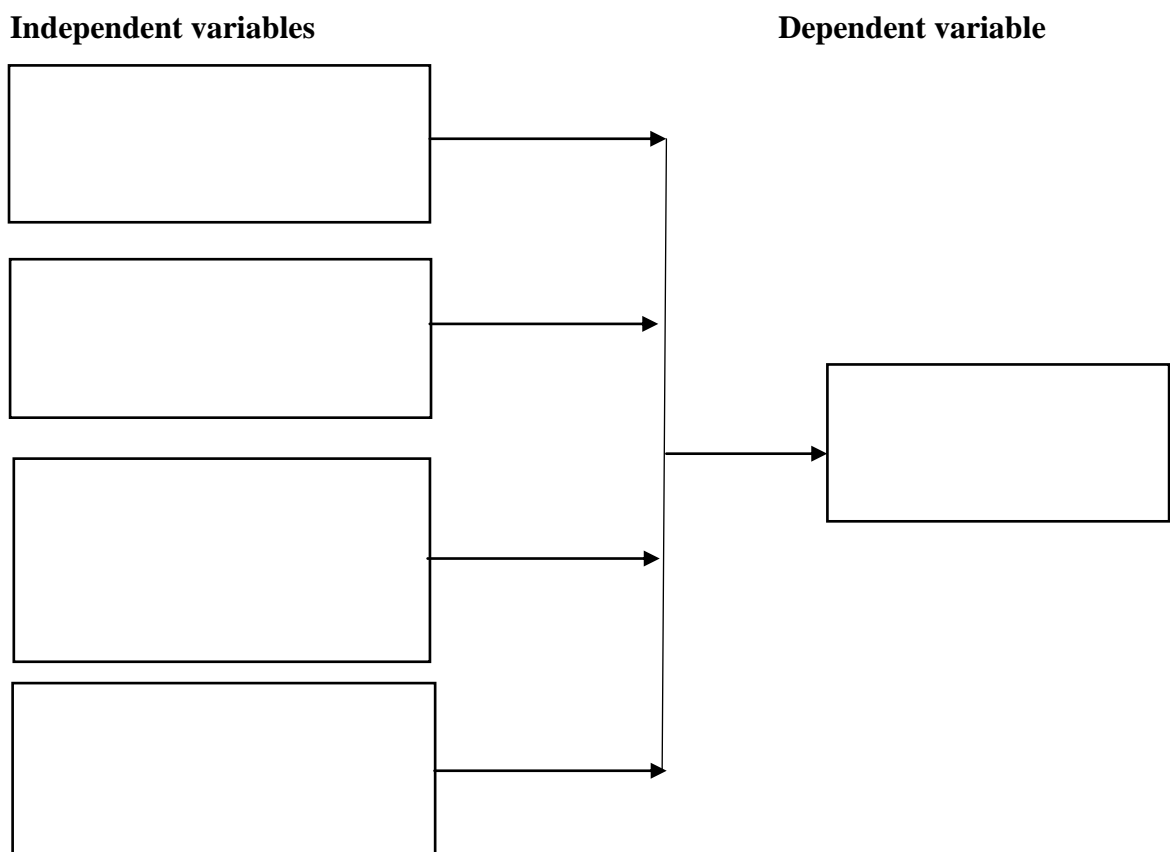
Average Collection Period is substitute to the firms average receivables investment as it is transformed to cash. When studying the outstanding balance of accounts receivables we need to take note on the straight influence between the interruptions in collection and credit policy (Richard & Laughlin, 2008) in relation to the annual firm's sales.

#### **2.2.4 The Operation and Cash Conversion Cycle Theory**

This Theory introduced by Richards and Laughlin (2008). These two researchers were looking about WCM (working capital management) and its distinct constituents. Feelings was that more time has been spent by financial managers in making decision on short-term assets and liabilities and also no or little attention has been given to this direction and this links the leverage in that debt financing ratio need to be kwon. They explained key elements of cash conversion cycle model as receivables, payables and inventories. The cycle is long whereby it starts when producers make payment for the raw materials so as to develop the final product and ends by collecting account receivable from credit sales to debtors. There is agreement between the financial managers and financial analyst that period or cycle varies as per as investment of working capital is concerned, (Richard & Laughlin, 2008). As conclusion, this theory is dominant theory when one studies WCM and this because of representation of all ideas and constituents of working capital categorized from acquiring of manufacturing materials up to the completed goods ready for consumption and this represents inventory levels, receivables and payments representing cash feature.

## 2.3 Conceptual Framework

In general logic this is seen as an effort to enlighten the study about the establishment on working capital management of financial performance on listed manufacturing on Nairobi Securities Exchange. The conceptual framework based on independent variables which include APP, ACP, ICP and leverage. The dependent variable is financial performance which will be explained by Return on Assets.



**Figure 2.1: Conceptual framework**

**Source: Researcher 2017**

### 2.3.1 Average Payment Period and Financial Performance

A firm statutes used to manage its creditors is stated to as the APP that is given by account payables in days are settled. It has been successfully used as a tool of measurement. It is an approximation of the days that is average of days the firm takes to clear its responsibility to people who have supplied them. To the firm the longer it

takes the better, since it discharges the cash flow for its instant necessities, in a study carried out by (Lantz, 2008) it was witnessed that accounts payable days is good when cash conversion cycle is short. The research carried out in Belgian companies by Deloof (2003), negative relationship was noted between account payables and financial profitability. This connection showed that profitability has impact on the accounts payable rule which indicated that a firm takes longer period to pay has less profit. Meanwhile suppliers of raw materials grant their customers a good discount for the cash payment hence increasing profit of the firm.

Boisjoly (2009), carried out research study in Boston in America and recognized that there was an increment in accounts payables turnover above 15 years which was in different to what is expected from large firms who have prolonged payments to creditors ranging 45-60 to 60-90 days. From this study only few firms was successful in increasing payment terms, to decrease working capital or increase accounts payable amount. Decisions on how to finance current assets involve trade off between risk and profitability. The greater the relative proportion of liquid assets, the less the risk of running out of cash, but profitability unfortunately, will be less. Effective management of various components of current assets, effective credit and collection procedures and inventory control have a bearing on the liquidity of the firm (Lantz B, 2008). The resolution of trade off between risk and profitability with respect to the decision depend on the risk preference of the management, who, it is hoped, have an eye on the likely impact of a decision on the firm's valuation. All firms require working capital, only differing in composition of the components and the controls and policies implemented. There is no universally accepted strategy for financing working capital; however there are principles that address short term financing policies (Lantz, B 2008).



### **2.3.2 Average Collection Period and Financial Performance**

The rule used to observe and manage the firm's debtor's ledger is known as ACP (average collection period). It is a management means used when analyzing the firms debtors position and has since been as a reliable analytical measure of accounts receivable in a firm. It gives an estimate of the period a firm provides before collecting its dues from the customer. This measure of unit is derived by the average of the initial and closing amount of account receivables, dividing it with net sales and finally multiply the results by average days in the year. Findings from research study carried out by (Lantz, 2008) had similar observation in that cash conversion cycle need to be kept short as per as inventory is concerned.

Boisjoly (2009) studied about the implication of cash flow management on working capital and gave evidence on how firms had focused on accounts receivables as their accounts receivables turnover which has increased for 15 years' time between 1190 to 2004 and provided that different techniques need to be put into practice so as to collect debts, give cash discount and trade credit.

### **2.3.3 Inventory Conversion Period and Financial Performance**

ICP is known to be the complete cycle or period taken to process the raw materials to finished goods. Firms hold inventories or stock before selling for a number of days which is termed as average days of inventory. These days are lowered in order to have short cash conversion period. To calculate the average amount of inventory you consider the opening amount plus the closing amount for the year then divide by two to obtain average. To obtain how big or small portion of the cost of inventory sold you divide the average cost of goods.

Deloof (2003) noted negative correlation existing in gross operating income and inventory's days. Companies profit is lowered by decreased sales which in turn increases the inventories. Boisjoly (2009) did another research and evidenced in a period of 15 years, when there is increase of inventory turnover there is an indication that firms have enhanced in inventory management. There are different operating techniques applied in inventory management namely make-in-order procedure, just-in-time and also reduce number of days as a way of reducing number of suppliers.

The level of inventory varies greatly among the firms. For firms with large inventories a drop of 1% in inventory can save the firm over a million dollars in interest costs alone (Boisjoly, 2009). Training institutions will hold stocks in form of stationery, food stuff (boarding), teaching materials and consumable stores which generally vary with student enrolment. Firms attempt to minimize the cost of holding inventory because inventory decisions are repetitive, the relevant management decision often relate to "how often" and "how much" inventories should be replenished. The requirements for inventory vary with activity and time of the year Ross (2002).

#### **2.3.4 Leverage and Financial Performance**

This is determined by ratios (different financial ratios). Ross *et al.*, (2002), defined leverage as total debt to total assets ratios. Leverage affects profit negatively and this is because firms require more resources to repay the debts which was used to finance their business activities and in return it reduces the profitability of the firm. According to Tobias (2010), it's dangerous to firm and investors to have huge debt. It's not advisable to control debt levels such that it can credit lowers or worse and also few debts on the other side can have serious questions. Company needs to make sure that the rate of return is higher interest rate such that there is growth in profits which

guarantees the repayment of the debt. Finally ratio of leverage is given as debt-equity ratio (Kathryn, 2001).

The above ratio expresses the percentage of firm financing which is obtained from the investors and creditors. When more credit funding is used it is an indication that there is higher debt to equity ratios proving that more debt was used to finance business activities than the owners (shareholders) money. But there is trust that it's good to mix owners' money and debt as way of financing business operations. When using leverage ratio in be a measure to see how capital is obtained in form of loans or as assessment on how good a company pay its financial. A leverage ratio is any one of several financial commitments.

### **2.3.5 Measurement of Financial Performance**

Profitability is defined a measure to earn profits from the business operations of the firm or the organization. Profitability indicates the competence in which the organization resources is used in value addition to the firm. There are other elements which can be used in relation to the measurement of profit but profitability as a term is more qualified in precise measurement to the profit (Lantz, 2008). Profit is defined as the revenue and expense difference of the firm for a duration let's say a year. Operations efficiency of a firm is determined by the calculations of the profitability ratios. There are different ratios to measure profitability ranging from ROA, ROI and Return on Equity. This study has used ROA (Return on Asset) ratio as measurement of financial profitability. ROA is expressed as the net income generated by a firm as percent of all assets which can be used by a certain organization. By the use of ROA it is hypothesized that firms having higher number of assets can earn more income levels. The management ability to have return on assets of a company is measured by

use of ROA. In calculation about the income amount to be used, interest expense is not deducted and this is because interest is considered as return creditors in regard to the resources they have provided to the firm. Further adjustments to the income amount are done before making any distribution to funds provider to the company Sarria-Allende (2010).

#### **2.4 Critique of the Existing Literature Relevant to the Study**

Company inventory, accounts collection and minimal amount of liquidity is composition of current assets. Current assets is financed by short term operation liabilities of the company. Preve and Sarria-Allende (2010) noted that financial needs is derived from current assets less short term operating liabilities. According to this perspective it is well structured that working capital amount that will be used by the company will come from the strategic decisions of the firm on how financial needs will paid for or funded by long term owners' equity and short-term debts from investors. Its clear working capital management is obtained by how to finance or balancing the current asset and current liability of an organization. In conclusion, to maximize shareholders' wealth capital management is the tool which is used to generate the required income for distribution.

Deloof (2003) studied non-financial companies during the period ranging from 1992 to 1996 in Belgian companies. The variables which were used include gross operating income and accounts payables, accounts receivables average days in inventories and collection period. From the study results this researcher noted that to create shareholders value or wealth maximization financial managers need to keep or maintain minimal levels of both account receivables and inventory average days.

Jose *et al.* (2003) by the use of multiple regression method or analysis studied about corporate returns and cash conversion period for selected sample size of 2718 firms in the year 1974 to 1993. It is from their research they noted that there was a linearity between management liquidity and higher financial performance for different firms and the range is from manufacturing, service business, Retail or wholesale, and professional ones.

Padachi (2006) from Mauritius carried out research on firms' performance manufacturing firms. Findings indicated that working capital is not constant and keeps on changing over the time which is influenced by the rate of creation of money and also inventories and accounts receivable which reduces the profit. Nazir and Afza (2008) did a research in Paskistan about operation cycle, ROA and leverage and found that they influence working capital management. Increase of sales is influenced by increment of cash conversion cycle. Meanwhile if working capital cost exceeds the benefits accrued from more inventories or giving long credit terms to customers may reduce profit of the organization and also increase the cash conversion cycle (Panighrahi, 2013).

Moyer *et al.* (2003) studied about working capital management using large portions of organizations total investment in total assets and the range was manufacturing firms composing of 40% and retail and wholesale 50% to 60% industries. Companys can have another strategy of minimizing it funding cost and this will be achieved though raising available funds through minimizing money tied up in the current assets. From the study it was clear that cash assists in keeping the company in liquid form. This assists the company to meet their responsibilities and also safeguards company from declared bankrupt.

## 2.5 Research Gaps

Jayarathne (2014) from Sri Lanka studied about influence of WCM on financial success of manufacturing firms registered on CSE. Data analysis used ordinary least square method. From that research it was found that cash period was negative interrelated with ROA the tool which measures firms' profitability.

Sadia *et al.* (2013) in Pakistan chose a sample of 32 firms (manufacturing) and used regression and correlation analysis to study about effect of cash cycle on firm's financial performance. Results showed substantial negative correlation when cash period and financial performance is compared. Omesa, Maniagi, Musiega & Makori (2013) examined the relationships between Working Capital Management and Corporate Performance of manufacturing firms listed on the Nairobi securities exchange. A sample of 20 companies whose data for 5 years from 2007-2011 was selected. For analysis Principal components analysis (PCA) is used due to its simplicity and its capacity of extracting relevant information from confusing data sets. From the results using PAC and multiple regression, working capital proxies Cash Conversion Cycle (CCC), Average Collection Period (ACP) and control variables Current Liabilities (CLTA), Net Working Capital Turnover Ratio (NSCA) and Fixed Financial Ratio (FATA) were significant at 95% confidence ( $p$  values are  $< 0.05$ ) to performance as measured by Return on Equity (ROE). Further, ACP was found to be negatively related to ROE while CCC, CLATA, NSCA and FATA.

From the above literature review few researches has been done in Kenya specifically about this topic but using different independent variable and that's why researcher undertook this research.

## **2.6 Summary of Literature Review**

Literature review has given clear indication regarding the effect of WCM on financial value of listed manufacturing companies in NSE and different theories are given as a backup to the independent variables. Financial performance has been presented by pointers like ROA of listed manufacturing firms at NSE. The conceptual frame work has shown the operationalization of the independent variables and independent variable and how the relationship will be measured. Critique of the existing literature review has been given showing how usually WCM was measured and how the difference came in. Lastly research gap is specified which expresses the interest of the research to carry out this research.

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.1 Introduction

It is described as orderly manner, theoretical procedures that should be applied by researcher in the field of research (Griffin, 2010). (Kombo & Tromp, 2009) stated that research methodology specifies the description on how to apply different methods in research. This chapter is composed of research design used, population targeted, sample and sampling techniques, tools to collect data, data collection procedures, data processing and data analysis procedures. Consequently this part/ chapter represents the model, methods, data and estimation techniques used in the study to investigate the effect of Average days payables, Average days receivables, Inventory Conversion Period and leverage on financial profitability of manufacturing firms listed in Kenya.

#### 3.2 Research Design

Descriptive design was applied in this research. This design intended to assemble data that allowed the investigator to describe effect relations amongst variables used in the research (Hair *et al.*, 2010) and (Krauss, 2005) argues that causal research studies if one variable influence the value of any other unit.

#### 3.3 Target Population

Population represents the collection of events or objects that have same features (Mugenda and Mugenda, 2003).The population was made up of all nine listed manufacturing and allied companies in the NSE as at 31st December 2015.



### 3.4 Sampling Frame

Data was collected from all listed manufacturing companies at Nairobi Security Exchange. It is from this sample frame a sample was drawn. The study applied secondary data which was extracted from financial statements.

### 3.5 Sample and Sampling Techniques

The purposive sampling was used in this study. This is because it allows researcher to use appropriate sample and allows the researcher to use studies which will give the needed information to meet the objectives or aims of the research (Mugenda 2003). The nine listed companies was appropriate for the sample. Time series data was analyzed for the five years which translates to 45 observations.

**Table 3.1 Sampling Frame and Sample Size (2011 – 2015)**

<b>MANUFACTURING FIRMS</b>	<b>N</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>2012</b>	<b>2011</b>	<b>YEARS</b>
BOC Kenya	45						5
British American Tobacco Ltd	45						5
Carbacid Investments Limited	45						5
East African Breweries Ltd	45						5
Eveready East Africa Limited	45						5
Flame Tree Group Holdings Ltd	45						5
Kenya Orchards Ltd	45						5
Mumias Sugar Company Ltd	45						5
Unga Group Ltd	45						5
<b>TOTAL</b>	45						45

**N= Number of observations**

**Source: Author 2017**

### **3.6 Data Collection Methods**

This study used NSE Handbook to gather necessary study data for the period of 2011 – 2015 of the financial year. This composed of audited financial statements which includes statements of financial position that is balance sheet, income statements and also cash flow statement. This period of five years gives guarantee of accurate data from the sampled manufacturing firms in NSE, Kenya. The five years data is in form of time series data ensuring accuracy when the data was analyzed to test the stated hypothesis of the research.

### **3.7 Data Collection Procedure**

NSE Handbook 2011- 2015 gave secondary data for the research. The researcher used secondary data sources so as to examine the occurrence and effectively solve the problem in hand and this is because secondary data is more reliable source of information (Uma, 2003). Time series data was applied in this research. The four independent variables extracted data from the NSE Handbook by considering the published yearly accounts of the listed manufacturing companies in the years of 2011 to 2015 December.

### **3.8 Data Processing and Analysis**

#### **3.8.1 Model Specification, Estimation and Rationale of Variables**

In research, research hypothesis cannot be answered simply by look of numbers and this means that data need to be processed and analyzed by use of statistical methods or procedures like SPSS version to give qualitative or quantitative information so as to recognize any substantial relationship between the variables of the research.

### 3.8.2 Descriptive Statistics

The secondary data was arranged and data converted into their normal logs to deal with the problem of large numbers and eliminate heteroscedasticity. Descriptive statistics were critical in shaping the arithmetical characteristics of the model in order to have good reputable model to analyze the data. Descriptive statistics analyzes comprised of calculating the central tendency statistics of the data over five which was coded in the SPSS. This was to solve the multi-collinearity problem which is common in time series data and is solved by finding out correlation matrix of the data.

### 3.8.3 Multiple Regression

The quantitative data was analyzed through statistical procedures. Model used was Multiple Regression to analyze data and hypothesis testing. Equation was:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Y = Financial value which is measured by ROA ratio.

$\beta_0$  = Slope of the regression line

$\beta_1 \dots \beta_4$  = Represents the slope giving the degree in which the firms' performance can change in independent variable given the change of one unit of the dependent variable.

$X_1$  = Average Payment Period

$X_2$  = Average Collection Period

$X_3$  = Inventory Conversion Period

$X_4$  = Leverage

$\varepsilon$  = Represents the error term.

**Table 3.2: Operationalization and Measurement of Research Variable**

<b>Category</b>	<b>Variable</b>	<b>Operationalization</b>	<b>Measurement</b>	<b>Hypothesis testing</b>
<b>Dependent Variable</b>	Performance of Listed Manufacturing Firms.	Return on assets	$\text{EBIT} \div \text{Total Assets}$ .	ANOVA
<b>Independent Variable.</b>	Average Payment Period	Accounts payables Cost of sales	Accounts Payables x 365	ANOVA
	Average Collection Period	Accounts receivables Net sales	Accounts Receivable $\div$ Net Sales x 365	ANOVA
	Inventory Conversion Cycle	Inventory Cost of sales	Inventory/Cost of Sales x 365	ANOVA
	Leverage	Total debt Total Equity	Total debt/ Total Equity	ANOVA

**Source: Research, 2017**

## **CHAPTER FOUR**

### **RESEARCH FINDINGS AND DISCUSSION**

#### **4.1. Introduction**

Data analysis and research outcomes are represented in this chapter as described in the chapter three. Research findings were given to address effect of WCM on financial performance of manufacturing firms at NSE, Kenya. Data for this research was collected for the financial year ranging from 2011 to 2015 and it's specifically for manufacturing firms listed in NSE, Kenya. Data was acquired from the NSE handbook. A census of all nine (9) listed manufacturing firms was used which translates observations (N) to be forty five (45). Nazir and Afza (2009) used return on asset in their research. The ROA creates the competence of the financial managers to use available assets for income generation. ROA as the asset base is used as superior measure of financial performance (Padachi, 2006). In this research, the researcher used APP, ACP, ICP and leverage as independent variables to measure working capital management.

#### **4.2. Descriptive Statistics**

This offers the measures of central tendency statistics of the scores relating to each of the variables used. The values of maximum and minimum of the variables are also presented which assists in getting the understanding about them. (Appendix II).

**Tables 4.2 Descriptive Statistics of Variables for Manufacturing Companies**

Variables	N	Minimum	Maximum	Mean	Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic
ROA	45	17.54	72.21	35.42	10.89
APP	45	26.17	108.25	52.99	16.36
ACP	45	27.82	55.50	40.29	6.80
ICP	45	17.95	46.33	26.50	4.93
LEV	45	0.22	0.81	0.511	0.11
Valid N (listwise)	45				

**Source: Research findings, 2017**

Table 4.2 above reveals ROA had mean of 35.42 percent of total assets, and indicating deviation of 10.89 %. Deviation of productivity can occur from the mean is by 35.42% in both sides. From the table 4.2 above 17.54 % is the minimum while 72.21 % is the maximum value. Also descriptive statistics are represented for the four independent variables that APP, ACP, ICP and Leverage which indicates the measure of efficiency of financial performance. The average payment time as payment policy is 52.99 days i.e. firms takes 52.99 days to pay its creditors. Accounts payables period has 16.26 days as standard deviation. These results are in line with findings of Boisjoly (2009), carried out research study in Boston in America and recognized that there was an increment in accounts payables turnover above 15 years which was in different to what is expected from large firms who have prolonged payments to creditors ranging 45-60 to 60-90 days.

Collection policy, ACP (Average Collection Period) was analyzed which gave an average of 40.29 days from the sample chosen. This means that the sampled firms wait for average of 40.29 days so as to collect cash from debtors. The variance in

mean from both sides was 6.80 days. Minimum value was 27.82 days and maximum value was 55.50 days of average collection period. Inventory policy was represented by analyzing inventory conversion period which gave 26.50 days. An average of 26.50 days of sampled firms was needed to sell their inventories. The variance was 4.93 days for holding stock which was termed as standard deviation. The period of holding stock had minimum value of 17.95 days and maximum value of 46.33 days. Findings from this research agrees with study carried out by (Lantz, 2008) had similar observation in that cash conversion cycle need to be kept short as per as inventory is concerned. Firms attempt to minimize the cost of holding inventory because inventory decisions are repetitive, the relevant management decision often relate to “how often” and “how much” inventories should be replenished. The requirements for inventory vary with activity and time of the year Ross (2002).

Debt to equity ratio was used to study the relationship between debts financing financial performance. Interpreted results indicated debt ratio mean value of 51.1 % and 11.67 % as standard deviation. Debt ratio had minimum value of 22 % and maximum value of 81 %.

#### **4.3 Pearson’s Correlation Coefficient**

Before regression results are discussed, it is imperative to find out the relationship in which analysis of different independent variable was developed from. Correlation was established by carrying out Pearson’s correlation analysis of independent variables of WCM and organizational financial performance. (Appendix II).

**Table 4.3 Correlation Coefficient of Variables for Manufacturing Firms**

Variables	Statistics	Variables				
		ROA	APP	ACP	ICP	LEV
ROA	Pearson Correlation	1	1.000**	0.699**	0.162	-0.245
	Sig. (2-tailed)		0.000	0.000	0.288	0.105
	N	45	45	45	45	45
APP	Pearson Correlation	1.000**	1	0.699**	0.161	-0.250
	Sig. (2-tailed)	0.000		0.000	0.291	0.097
	N	45	45	45	45	45
ACP	Pearson Correlation	0.699**	0.699**	1	0.580**	-0.171
	Sig. (2-tailed)	0.000	0.000		0.000	0.260
	N	45	45	45	45	45
ICP	Pearson Correlation	0.162	0.161	0.580**	1	0.013
	Sig. (2-tailed)	0.288	0.291	0.000		0.934
	N	45	45	45	45	45
LEV	Pearson Correlation	-0.245	-0.250	-0.171	0.013	1
	Sig. (2-tailed)	0.105	0.097	0.260	0.934	
	N	45	45	45	45	45

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

**Source: Research findings, 2017**

Table 4.3 showed positive correlation between ROA and APP, Leverage and ACP at confidence level of 95%. ROA and ACP indicated positive relationship which meant that customers take less days to pay bills, and then the organization can have enough cash to restock which can lead to increased sales hence more profit being realized by the firm. Above table showed Average Collection Period being positively correlated with ROA. Correlation coefficient was 0.69 of average collection period to return on assets with the  $p$  value is 0.00, ( $0.00 < 0.05$ ) ruling out that researcher rejects the null hypothesis and hence accepting the alternative one that is there is significant relationship between accounts receivables and working capital management. These results are associated with conclusions of Hayajneh and Ait Yassine (2011) who studied efficiency of WCM and financial performance in Jordan companies and noted



positive connection amongst average receivable and APP and financial performance of companies.

Table 4.3 above showed positive significant relationship between APP and financial performance. The interpretation is that when companies don't pay their accounts payables in time they earn little profits and this is because companies don't earn discounts by paying prompt which means discounts received increases the profits. The same table 4.3 above, indicated that average payment period had correlation coefficient relationship of 1.00 and  $p$  value was (0.00) with ROA. Results indicated that we accept the alternate stating a notable significant relationship between APP and WCM at 0.05 that is  $(0.00 < 0.05)$ . These results collaborates to those of Deloof (2003) whereby researcher sampled 1009 big Belgian non-financial for a cycle ranging from 1992 to 1996 who noted positive relationship between the collection periods of account receivables, account payables and ROA of Belgian companies.

Table 4.3 above, showed ROA was positive correlated to ICP. Positive significant relationship between ROA and ICP can be described that production process interruptions are minimized by maintaining high levels of inventory. This minimizes supply cost of goods and prevents business loss because of product shortages. Companies are safeguarded from price fluctuations by doing so (Blinder & Maccrni, 1991). Inventory collection cycle had a positive correlation coefficient of 0.16 and the  $p$  value was 0.28 with ROA,  $(0.28 > 0.05)$  and therefore null hypothesis at 95% confidence level was accepted.

Table 4.3 results indicated negative correlation between ROA and leverage. Negative significant relationship indicated that companies will use the available resources to repay the borrowed money back and this reduces the profit earned by the organization. Leverage had a negative correlation coefficient of -0.25 and the  $p$  value

of 0.10 with ROA, ( $0.10 > 0.05$ ), then the null hypothesis was accepted at confidence level of 95%.

#### 4.4 Regression Analysis

**Table 4.4 Regression Analysis**

<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
1	1.000 <sup>a</sup>	1.000	1.000	0.0345

**a. Predictors: (Constant), APP, ACP, ICP, LEV**

**Source: Research findings, 2017**

Independent variables changes or variations are shown or explained by analyzing the coefficient determination of adjusted R squared of the data of sampled firms. Table 4.4 above showed 1.00 as value of adjusted R squared which means variation was 100% in organization performance because of changes in APP, ACP, ICP and Leverage at 95% confidence level. Financial performance change of 100 % was accounted by APP, ACP, ICP and Leverage.

Study variables relationships are explained by R which is the coefficient correlation. From the table it's true that there was a positive association of the research variables used in the research of 1.00.

#### 4.5. ANOVA Interpretations

Model	Factor	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5222.64	4	1305.66	1094978.53	0.000 <sup>b</sup>
	Residual	0.04	40	0.001		
	Total	5222.68	44			

a. Dependent Variable: ROA

b. Predictors: (Constant), LEVERAGE, INVENTORY, AVERAGE, COLLECTION

From the Anova table above (Table 4.5), we get the data we require from the predictors variable, APP, ACP, ICP and leverage, to foresee the results of the firms' financial performance. Significance examination confirmed that all the predictors had significantly relationship ROA at confidence level of 95%; ( $P= 0.00 < 0.05$ ) and contributes to the financial performance.

#### 4.6 Regression Model Analysis.

Hypothesis testing was done by use of regression model analysis and determining significant relationship between WCM and financial performance.

**Table 4.6. Regression Model Analysis.**

Model	Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.205	0.043		-4.755	0.000
	APP	0.667	0.000	1.002	1347.265	0.000
	ACP	-0.002	0.001	-0.001	-1.218	0.230
	ICP	0.003	0.001	0.001	1.825	0.075
	LEV	0.541	0.046	0.006	11.730	0.000

a. Dependent Variable: ROA

**Source: Research Findings 2017**

Unstandardized coefficients results from the above table was used:

$$Y = -0.205 + 0.667X_1 - 0.002X_2 + 0.003X_3 + 0.541 X_4$$

Whereby;

Y = is the value of the dependent variable, Performance of listed manufacturing firms (ROA).

X<sub>1</sub> = Average Payment Period.

X<sub>2</sub> = Average Collection Period.

X<sub>3</sub> = Inventory Conversion Period

X<sub>4</sub> = Leverage

The outcomes of multiple regression revealed that Average Payment Period had a positive and significantly influence the financial value with a beta value of  $\beta_1 = 1.00$  and *p*-value of 0.00 whereby  $0.00 < 0.05$ . Researcher rejected the Ho<sub>1</sub> null hypothesis and accepts alternate hypothesis signifying that for each unit growth in Average Payment Period, there is 1.00 unit increase in financial value.

Results disclosed that the standardized coefficient beta and *p* value of Average Collection Period were negative and significant effect on financial performance with  $\beta_1$  value of -0.001, (*p* = 0.23 which is greater than 0.05). Thus, the researcher accepts the Ho<sub>2</sub> null hypothesis. Also, for each unit decrease in Average Collection Period, there is 0.001 unit decrease in financial value.

Also outcomes exhibited that the standardized coefficient beta and *p* value of Inventory Conversion Period were positive and significantly affect the financial performance with  $\beta_1$  value of 0.001, (*p* = 0.075 which is greater than 0.05). Thus, the researcher accepts the Ho<sub>3</sub> null hypothesis.

Lastly results specified that the standardized coefficient beta and  $p$  value of leverage were positive and significant effect on financial value with  $\beta_1$  value of - 0.006, ( $p = 0.000$  which is less than 0.05). Therefore the researcher rejects the Ho4 null hypothesis and it is accepted that, leverage was a positive and significantly affect the financial performance; whereby, for each unit growth in leverage, there is 0.006 unit decline in financial value.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

The independent variables that were deliberated on were, APP, ACP, ICP and Leverage. Financial performance indicator that was studied was Return on Assets (ROA).

It is in this chapter whereby findings are summarized upon which recommendations are given. Also further research is proposed concerning the four objectives of the study together with research hypothesis. The objectives included the following:

- i. To determine the effects of Average Payment Period on financial performance of the listed manufacturing firms at NSE, Kenya.
- ii. To explore the effects of Average Collection Period on financial performance of the listed manufacturing firms listed at NSE, Kenya.
- iii. To establish effect of Inventory Conversion Period on financial performance of the listed manufacturing firms at NSE, Kenya.
- iv. To examine effect of leverage on financial performance of the listed manufacturing firms at NSE, Kenya.

#### 5.2. Summary of Key Findings

Evidence from previous studies on whether working capital management affects firms financial performance revealed that there were mixed results based on APP, ACP, ICP and leverage. In Kenya outcome was the same those of developed countries. The study applied panel data over a five year period (2011-2015). Regression coefficients were interpreted using the SPSS software output. To ensure that enough degrees of

freedom in the models to be estimated are available, yearly data covering the entire study period was collected.

The data collection method was Secondary research, which essentially involved reviewing data sources that have been collected for some other purposes than the study at hand. Thus, all the relevant data for this study are available in secondary form. The data was obtained from the NSE Handbook book for the cycle 2011-2015.

This was done by use of desk search techniques and by visiting the NSE website.

The correlation findings of the study showed that APP, ACP, ICP and leverage influenced the firm's performance. These findings were presented in the forms of descriptive statistics. Among the financial performance indicators; APP, ACP, ICP and leverage had the significant influence on financial performance.

### **5.2.1 To Determine the Effects of Average Payment Period on Financial Performance of the Firms Listed Manufacturing in NSE, Kenya.**

The first objective of the research sought to investigate days in accounts payables. Results on the influence of days in accounts payables on financial performance showed that variations in day's accounts payables can be explained by the firm financial performance. This findings is further supported by regression results which showed that day's accounts payables had a positive and significant affects returns on equity in manufacturing firms in Kenya. Null hypothesis was rejected and accept the alternate hypothesis that accounts payables had significant relationship on financial performance of listed manufacturing firms NSE, Kenya.

### **5.2.2 To Explore the Effects of Average Collection Period on Financial Performance of the Listed Manufacturing Firms Listed at NSE, Kenya.**

The second objective of the research sought to establish days in accounts receivables. Findings on the influence of days in accounts receivables on financial performance showed that variations in day's accounts receivables can be explained by firm financial performance. These findings were further supported by regression results which showed that day's accounts receivables had a positive beta value. Therefore researcher accepted the null hypothesis that there is no significant effect of Average Collection Period on financial performance of the firms at NSE, Kenya at 95%.

### **5.2.3 To Explore the Effect of Inventory Conversion Period on Financial Performance of The Listed Manufacturing Firms at NSE, Kenya**

The third objective was set to explore the effect of inventory conversion period. The findings are supported by the regression results which showed positive results. The researcher accepted the null hypothesis that there is no significant effect of inventory conversion period on financial performance of the firms at NSE, Kenya. This is consistent with a conservative working capital management policy, but the differences in results may be attributed to regression analysis method that was applied by this research.

### **5.2.4 To Examine Effect of Leverage on Financial Performance of The Listed Manufacturing Firms at NSE, Kenya.**

The fourth aim was set to establish the effect of leverage. The regression findings showed that leverage have positive influence on the financial performance of firms in Kenya. The finding is backed up by coefficient of correlation which shows that the deviations in firm's financial performance are explained by leverage. The effect of



leverage on performance is also statistically significant and hence null hypothesis was rejected at 95%. Therefore we accept the alternate hypothesis that leverage affects financial performance of listed manufacturing firms in Kenya.

### **5.3 Conclusion**

Kenyan manufacturing firms which are listed in NSE have huge cash which finance working capital. Now it is clear that if huge capital amount is well managed it will have significant effect organizational performance of those companies as noted in the research findings. Research noted positive correlation between ROA and the company's Average Payment Period, Average Collection Period and Inventory Conversion Period. However, the study outcome indicated that there is a negative correlation between ROA and ICP.

#### **5.3.1 Average Payment Period and its Effect on Financial Performance of the Listed Manufacturing Firms at NSE, Kenya.**

The findings on Days account payables showed positive influence on firms' performance hence the financial manager should extend the repayment period to retain the funds in the firm so as to utilize the cash on other financial investment, as long as this is done without putting on strain with the firm suppliers.

#### **5.3.2 Average Collection Period on Financial Performance of the Listed Manufacturing Firms Listed at NSE Kenya.**

The findings on day's account receivables show negative relationship on financial performance of the company hence the financial manager should apply techniques to strengthen their collection procedures to shorten credit terms to their customers in order to keep the cash conversion cycle short.

### **5.3.3 Inventory Conversion Period and its Effect on Financial Performance of the Listed Manufacturing Firms at NSE Kenya.**

The outcome revealed that days in inventory is noted had a positive results effect on financial value of manufacturing firms. This was in line with a conservative working capital management policy, which advocates for minimization of cost from possible interruptions process and possible loss of company because of shortages hence the need to have high levels of inventory.

### **5.3.4 Leverage and its Effect on Financial Performance of the Listed Manufacturing Firms at NSE, Kenya.**

Financial managers should worry about leverage since it has proved that leverage does affect the financial performance of the company. The research recommends not that managers should go for an aggressive credit policy to minimize the use of debt in capital spending activity since higher debts values needs more resources by the company in order to settle the debt, minimizing the funds available for investment. Too much debt can be dangerous for a company and its investors, (Tobias, 2010).

## **5.4. Recommendations**

The recommendation are based on the outcome on the objectives of the research as ruled out by the research findings after data analysis and data interpretation. From the findings firms should delay in making payments to the supplies simply because they can use the cash in hand to invest in other projects which can increase profitability of the firm. Firms' collection policy must be tight so as to make sure that debts are collected on time and that money put into investment. Enough stock need to be maintained and this is because interruptions need to be minimized at all and to make sure that customers' needs are well taken care off. Leverage is very important as company is kept in understanding about liquidity status and this is to make sure that

firms are not managed purely by debts because this means that a lot of resources will be used to repay the money and at the same time investors can keep off if they see the company is in debt throughout.

#### **5.4.1 Policy Recommendations**

Policy recommendations are given as per the objectives the research study. The general objective of the study was to examine the effect of working capital management on the financial performance of listed manufacturing firms at NSE, Kenya. Also the specific objectives were:

- i. To assess the effects of Average Payment Period on financial performance of the listed manufacturing firms at NSE, Kenya.
- ii. To determine the effects of Average Collection Period on financial performance of the listed manufacturing firms listed at NSE, Kenya.
- iii. To establish the effect of Inventory Conversion Period on financial performance of the listed manufacturing firms at NSE, Kenya.
- iv. To examine the effect of leverage on financial performance of the listed manufacturing firms at NSE, Kenya.

The management of the organization should make policy so as to delay the payments for suppliers that is all the creditors of the organization. It is from this policy a pool of money will be generated which can and available projects or ventures which can generate more money will be selected.

Policy recommendations on average collection period should be made such that a certain number of days is determined to collect all the money from all the debtors. This availability of ready cash in the organization will help motives of cash

management such that if a there is available cheap goods can be purchased by the organization and more profits can be made.

Policy on inventory conversion period should be made by the top managers such that the cost of production is kept at minimal and at the same time all customer wants are satisfied and this will ensure that the profits are maximized which is the main purpose of any business in operation.

Policy recommendations on the leverage should be made such that a well-balanced capital structure is achieved between the owner's money and debts. This is because more resources will be needed to repay the money and in return profit Margin will go down which can lead insolvency of the company.

#### **5.4.2 Theories Recommendations**

Based on the theories which were used in the research, recommendations needs to be drawn. Theories used were:

- i. Free Cash Flow Theory
- ii. Risk and Return Theory
- iii. The Operation and Cash Conversion Cycle Theory

Based on Free Cash Flow Theory, shareholders needs to receive dividends form their investment. Managers interest should not prevail compared to shareholders one. This is so because many managers pay themselves huge amounts of money and more compensations without wondering the financial strength of the organization. This caters for surplus cash which is at hands of managers. Therefore it is recommended that a good plan needs to be put in place to invest ant available cash.

According to Risk and Return Theory there are both risk- seekers and risk averters (Tiegen & Brun, 2007). Managers are recommended to evaluate all the risk factors

associated with any business to be undertaken by the organization. High profit businesses has high risk and low profit business is associated with low risk, (Tiegen & Brun, 2007).

The last the was The Operation and Cash Conversion Cycle Theory, the researcher recommends that both short term and long term decisions are very important in the prosperity of an business. Time period and business cycles vary differently in different businesses (Richard & Laughlin, 2008). This is because in short term operations liquid money is needed to pay for daily expenses to enable the business operations. In long term aspect it maintains the survival of the organization as this ensures continuity of the organization.

### **5.5 Suggestions for Further Studies**

Research did not include all financial measurements such as Age of the firm, firm size and liquidity on their influence on the financial value of listed manufacturing firm. Further studies can be conducted with all these variables to test the significance of the above variables both on the ROE and ROA. Similar studies may also be replicated in the sub Saharan countries to explore further the effects of Average days payables and Average days receivables with Leverage as the control variable.

## REFERENCES

- Akoto, R.K., Awunyo-V. D., & Angmor, P.L. (2013). *Working capital management and profitability: Evidence from Ghanaian listed manufacturing firms*. *Journal of Economics and International Finance*, 5(9), 373-379.
- Basu, A., Lal, R., Srinivasan, V. & Staelin, R. (1985). Sales force compensation plans: An Agency Theoretic Perspective. *Marketing Science*, 4, 267-291.
- Belverd E. Needles, Marian P., Susan V. (2010) *Financial and Managerial Accounting*, p. 373.
- Black B. (2002): *The non-correlation between board independence and long-term firm performance*. *Journal of Corporation Law*, 24(2), 231-274.
- Blinder, A.S. & Maccini, L.J. (1991). The resurgence of inventory research: What have we learned? *Journal of Economic Survey*, 5, 291-328.
- Boisjoly, R.P. (2009). The cash flow implications of managing working capital and capital investment. *Journal of Business and Economic Studies*, 15(1), 98-108. Boston, MA: Pearson Education.
- Deloof, M. (2003). Does working capital management affect profitability of Belgian firms? *Journal of Business Finance and Accounting*, 30(3/4), 573-588.
- Deloof. M. (2003). "Dose Working Capital Management Affect Profitability of Belgian Firms?" *Journal of Business Finance and Accounting* 30, 576-587.
- Elmore, C. (2011). *The 8 Pitfalls of Accounts Payable Automation*. NC: Create Space. p. 198. ISBN 1-4610-3996-7.
- Eisenhardt, K. (1985). Control: Organizational and Economic approaches. *Management Science*, 31, 134-149.
- Fama, E. (1980). Agency problems and the theory of firm. *Journal of Political Economy*, 88, 288- 307.
- Frank, Murray Z., & Goyal, Vidhan K. (2003). Testing the pecking order theory of capital structure. *Journal of Financial Economics*, 67(2003), 217-248.
- Gill, A., Biger, N., Mathur, N. (2010). The relationship between working capital management and Profitability: Evidence from the United States. *Business and Economics Journal*, 10, 1-9.
- Gentry, J.A., Vaidyanathan, R., Lee, R. and Wai, H. (1990), "A weighted cash conversion cycle", *Financial Management*, 19, (1), 90-99.

- Gitman, L. J. (2009). *Principles of Managerial finance* (12th ed.). Boston, MA: Pearson Prentice Hall.
- Gujarati, D. (2004). „Basic econometrics“ 4th Ed McGraw–Hill Companies.
- Hayajneh, O.S & Ait Y. FL (2011), 'The Impact of Working Capital Efficiency on Profitability – An Empirical Analysis on Jordanian Manufacturing Firms', *International Research Journal of Finance and Economics*, 66, 67-76.
- Hair, J.F. (2010). *Multivariate Data Analysis*. (7th Ed.), Upper Saddle River, New Jersey. Prentice Hall.
- Huynh, N. (2011). The influence of working capital management on profitability of listed companies in the Netherlands. University of Twente, s1062980.
- Jayarathne T.A.N.R. (2014). Impact of working capital management on profitability: evidence from listed companies in Sri Lanka. *Proceedings of the third international conference on management and economics*. ISBN 978-955-1507-30-5.
- Jensen, M. C. (2006). Agency Cost of Free cash flow, Corporate Finance and Takeovers. *The American Economic review*, 76, (2), 323-329.
- Jordan, R.W (2003). '*Fundamentals of Corporate Finance*',( 6th ed.), The McGraw–Hill Companies, USA
- Jose, M., Lancaster, C., Stevens, J., (1996). Corporate Returns and Cash Conversion Cycles. *Journal of Economics and Finance*, 20, 33-46.
- Karaduman, H.A, Akbas, HE, Caliskan, A.O & Durer, S. (2011). 'The Relationship between Working Capital Management and Profitability: Evidence from an Emerging Market', *International Research Journal of Finance and Economics*, 62, 61-67.
- Kosnik, R. (1987). Greenmail: A study in Board performance in corporate governance. *Administrative science quarterly* 32, 163-185.
- Kombo, D. K., & Tromp, D. L. A. (2010)'. Proposal and Thesis Writing: An Introduction. Paulines Publications' Africa, Nairobi.
- Lantz, B. (2008). *Operativ verksamhetsstyrning*. (2nd ed). Lund: Student literature.
- Lazaridis, J., Tryfonidis, D. (2006). Relationship between working capital management and profitability of listed companies in the Athens Stock Exchange. *Journal of Finance Management Analysis*, 19, 26-35.
- Marco M. (2014). Cash conversion cycle and firm's profitability: an empirical

- analysis on a sample of 4226 manufacturing SMEs of Italy. *International Journal of business and management*, 9, (5), 2014. ISSN 1833-8119. Publisher: Canadian Center of Science and Education.
- Mitnick, B. (1986). *The Theory of Agency and Organizational Analysis. Unpublished working paper*, University of Pittsburgh, U.K.
- Mugenda, O. M., & Mugenda, A. G. (2003). *Research Methods: Quantitative and Qualitative Approaches*.
- Mukherji, A., Desai, A.B. & Wright, P. (2008). A contingent relationship between risk and return: *Towards a behavioural model of decision making*. Institute of Behavioural and Applied Management.
- Moyer, R.C., J.R. Mcguigan and W.J. Kretlow, (2003). *Contemporary Financial Management*. (9th Ed). United States of America: Thomson Press.
- Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, (13) 187- 221.
- Nazir, M.S & Afza, T. (2007). "Working Capital Management Policies of Firms: *Empirical Evidence From Pakistan'* (9<sup>th</sup> ed) South Asian Management Forum(SAMF), North South University, Dhaka,Bangladesh.
- Nazir, M.S & Afza, T (2008) 'On The Factor Determining Working Capital \ Requirements', *Proceedings of ASBBS*, 15, (1), 293-301.
- Nazir,M.S.&Afza ,T.(2009). Impact of Aggressive Working Capital Management Policy on Firms' Profitability: *The IUP Journal of Applied Finance*, 15, 20-30.
- Nobanee, H, Abdullatif, M. & AlHajjar, M. (2011). 'Cash conversion cycle and firm's performance of Japanese firms', *Asian Review of Accounting*, 19, (2), 147-156.
- Padachi, K (2006). 'Trends in Working Capital Management and its Impact on Firms' Performance: An Analysis of Mauritian Small Manufacturing Firms', *International Review of Business Research Papers*, 2, (2), 45-58.
- Padachi K., 2006," Trends in Working Capital Management and its Impact on Firms' Performance: An Analysis of Mauritian Small Manufacturing Firms", *International Review of Business Research Papers*, 2, (3).
- Panigrahi. A, (2013), "Cash Conversion Cycle and Firms' Profitability – A study of cement manufacturing companies of india" *International Journal of Current Research*, 5, (06), 1484-1488.



- Preve, L., Sarria-Allende, V. (2010). Working Capital Management (Financial Management Association Survey and Synthesis Series), Oxford University Press.
- Richards, V.D. & Laughlin, E.J. (2008). A cash conversion cycle approach to liquidity analysis. *Financial management*, 9, 32-38.
- Ross, S.A. (1973). The Economic Theory of Agency: The principal's Problem. *American Economic Review*, 63, 134-139.
- Sadia M, Abdul M. Saba S & Tariq A. (2013). The relationship between cash conversion cycle and profitability of firms: An empirical investigation of Pakistani firms. *Journal of emerging issues in economics, finance and banking*. 1, 2306-367
- Senthilmani T. (2013). Impact of working capital management on profitability in UK manufacturing industry. London South Bank University.
- Schaeffer, Mary S. (2006). Accounts Payable & Sarbanes Oxley: *Strengthening Your Internal Controls*. John Wiley & Sons. ISBN 0-471-78588-1.
- Shin H.H, Soenen, L. (1998). Efficiency of working capital management and corporate.
- Simon, H. (1976). Administrative Behaviour (3rd ed.). New York. The freeman press.
- Spence, A.M. & Zeckhauser, R. (1971). Insurance, information and individual action. *American Economic review*, 61, 380-387.
- Tiegen, H.K. & Brun, W. (2007). Anticipating the future: Appraising risk and uncertainty. routledge Dress, New York. U.S.A.
- Uma, S. (2003). Research Methods for Business Students: *A skill building approach*, (4th Ed.) John Wiley & Sons.
- Uyar, A. (2009) The Relationship of Cash Conversion Cycle with Firm Size and V. Ganesan, "An analysis of working capital management efficiency in Telecommunication equipment,"
- Williamson, O.E. (1984). Corporate governance. *Yale Law Review*, 93, 1197-1230.
- Yaghob N. A. and Vakilifard, H. R. and Babae A. R. (2010), "the relationship between working capital management and profitability in companies listed in Tehran Stock Exchange", *The Journal of Portfolio Management and Financial Engineering*, 2 -117.

Dongzhi Y. (2011). "Management of enterprise operation capital, cash conversion cycle and the Merchandising ratio," *Journal of Liaoning Technical University* (6th ed) 345-348

## **APPENDICES**

### **APPENDIX I**

#### **LETTER OF INTRODUCTION.**

Vincent Makau Muia

P.O.Box 90420-80100,

#### **MOMBASA.**

To: \_\_\_\_\_

\_\_\_\_\_

Dear Sir/Madam,

#### **RE: INTRODUCTION LETTER FOR VINCENT MAKAU MUIA**

I'm MBA student in the School of Business, Technical University of Mombasa. I'm conducting an academic research project titled the "Effect of WCN (working capital management on financial performance of listed manufacturing firms on NSE, Kenya, being part of requirement for this degree. Your participation in this exercise will be highly appreciated as an integral part of this study.

The results of this research are for educational purposes only and will be preserved with utmost privacy.

Thank you.

VINCENT MAKAU MUIA.

**APPENDIX II**  
**SECONDARY DATA COLLECTION TOOL.**

**i. (Average Payment Period): (Accounts Payable/Cost of Sales x 365)**

Year Name	2015	2014	2013	2012	2011
B.O.C Kenya Ltd.	166.13	102.42	102.42	154.14	128.26
British American Tobacco Ltd	51.51	48.46	77.11	81.80	84.61
Carbacid Investments Ltd.	45.78	43.98	47.98	41.87	43.98
East African Breweries Ltd.	93.89	92.68	82.07	97.61	108.57
Eveready East Africa Ltd.	55.87	57.09	60.67	65.98	59.05
Flame Tree Group Holdings	76.98	68.82	70.45	71.82	73.90
Kenya Orchards Ltd.	65.63	63.92	60.73	63.73	62.87
Mumias Sugar Co. Ltd	79.45	71.98	76.90	75.90	78.02
Unga Group Ltd.	89.54	80.56	90.67	92.56	87.02

**ii. Average Collection Period: (Accounts Receivable/Net Sales x 365)**

<b>Year</b> <b>Name</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>2012</b>	<b>2011</b>
B.O.C Kenya Ltd.	50.37	42.28	47.49	34.87	53.05
British American Tobacco	14.88	12.92	19.84	12.12	10.44
Carbacid Investments Ltd.	12.12	12.67	11.76	10.45	11.67
East African Breweries Ltd.	27.87	26.39	27.85	26.91	28.72
Eveready East Africa Ltd.	40.54	39.67	45.98	36.98	42.87
Flame Tree Group Ltd	33.07	30.64	27.97	31.82	30.81
Kenya Orchards Ltd.	37.86	35.91	33.84	30.56	36.83
Mumias Sugar Co. Ltd	25.96	26.94	24.92	27.98	28.92
Unga Group Ltd.	20.67	19.67	23.97	21.76	22.54

**iii. Inventory Conversion Period: (Inventory/Cost of Sales x 365)**

<b>Year</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>2012</b>	<b>2011</b>
<b>Name</b>					
B.O.C Kenya Ltd.	60.62	57.34	56.01	63.62	54.58
British American Tobacco	55.03	59.85	66.51	72.27	91.97
Carbacid Investments Ltd.	45.98	47.98	43.87	45.87	47.87
East African Breweries Lt	41.98	46.91	43.19	50.67	35.17
Eveready East Africa Ltd.	50.76	53.98	54.91	52.91	55.98
Flame Tree Group Ltd	42.90	40.34	45.78	41.78	44.12
Kenya Orchards Ltd.	45.91	43.68	45.82	47.63	42.75
Mumias Sugar Co. Ltd	50.56	52.38	50.76	46.98	54.92
Unga Group Ltd.	60.90	61.43	57.98	62.98	56.96

**i. Leverage (Total debt/ Total Assets)**

<b>Year</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>2012</b>	<b>2011</b>
<b>Name</b>					
B.O.C Kenya Ltd.	0.67	0.82	0.65	0.68	0.70
British American Tobacco	0.69	0.69	0.68	0.68	0.69
Carbacid Investments Ltd.	0.67	0.82	0.74	0.72	0.80
East African Breweries.	0.673	0.65	0.58	0.73	0.73
Eveready East Africa Ltd.	0.78	0.716	0.75	1.01	0.71
Flame Tree Group Ltd	0.90	1.05	0.86	0.78	0.63
Kenya Orchards Ltd.	0.67	0.84	0.98	0.67	0.38
Mumias Sugar Co. Ltd	0.68	0.79	0.74	1.76	0.73
Unga Group Ltd.	0.69	0.67	0.67	0.67	0.67