# RELATIONSHIP BETWEEN WORKING CAPITAL MANAGEMENT AND FINANCIAL PERFORMANCE OF MANUFACTURING FIRMS IN KENYA

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**D63/72576/2014**

**A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF THE DEGREEE OF MASTER OF SCIENCE (MSC) IN FINANCE OF THE UNIVERSITY OF NAIROBI**

**NOVEMBER 2016**

## DECLARATION

This research project is my original work and has not been presented for a degree in any other university or college.

Signature ……. Date ……..

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This research project has been submitted for examination with my approval as a University Supervisor.

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## ACKNOWELDGEMENT

I wish to express my sincere gratitude to my supervisor Mr. Mwachiti for his useful guidance that enabled me to complete this research project in time.

## DEDICATION

This research project is dedicated to dear mum Peris Moraa for laying a strong foundation to my life. Secondly, my special dedication to my dear daughter Joyvashti Moraa and dear son Faegan Ndege who always remained my source of joy, inspiration, motivation and desire to outshine through scholastically. I am proud to have you.

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## LIST OF ABBREVIATIONS

| | | |
|---|---|---|
| ACP | - | Average Collection Period |
| APP | - | Average Payment Period |
| ACP | - | Average Collection Period |
| CCC | - | Cash Conversion Cycle |
| ITR | - | Inventory Turnover Ratio |
| IO | - | Industrial Organization |
| MP | - | Market Power |
| NSE | - | Nairobi Securities Exchange |
| PPP | - | Public Private Partnership |
| ROA | - | Return on Assets |
| ROE | - | Return on Equity |
| SEZs | - | Special Economic Zones |
| WCM | - | Working Capital Management |

## ABSTRACT

Financial performance is influenced by management of current assets and liabilities. These current assets can be described as the assets which will be turned into physical cash in a year, if the business runs smoothly, outside of having to suffer a decrease in value, or disturbing the running of the company. The study employed both descriptive and inferential analysis. Descriptive analysis shows the relevant aspects of the phenomena under consideration. Inferential analysis study employs Pearson correlation, the generalized multivariate linear regression analysis and the Chi-square statistics. Initially the study determined the performance of the financial performance variables under consideration that were debt ratio, average payment period, average collection period, inventory turnover period and cash conversion ratio. Their mean, standard deviation, minimum and maximum values were determined. The Pearson correlation result shows that manufacturing firms' financial performance has a significant association with current ratio, average payment period, inventory turnover period and cash conversion ratio. The results indicated that current ratio, average Payment Period (in Days), inventory turnover period and cash conversion period had statistically significant influence on the financial performance of manufacturing firms. Evaluating whether working capital management has a relationship on financial performance of manufacturing companies in Kenya with a Pearson coefficient of 17.700 and p-value of 0.007 shows a strong, significant, positive dependence between working capital management and financial management of companies in Kenya. Therefore, centering on these findings the research fails to accept the null proposition that there is no relationship between working capital management and financial performance of companies in Kenya and accepts the alternative proposition that there exists an association between working capital management and financial management of companies in Kenya.

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

The management of performance impacts liquidity together with cost-effectiveness of the company as far as economic strategy is concerned. Performance management is influenced by the issues brought about by the management of current assets and liabilities. These current assets can be described as the assets which will be turned into physical cash in a year, if the business runs smoothly, outside of having to suffer a decrease in value, or disturbing the running of the company. Examples are cash, marketable stocks and bonds and shares, account to be taken in and inventory. Current liabilities on the other hand are the liabilities ought to be paid at the beginning from the current assets or from the company's earnings within a year of a normal business course.

The fundamental current liabilities include bills and accounts payable, expenses due, and bank overdraft. Proficient performance management is a fundamental part of the total strategy of the corporation to optimize investors' value. In this research I have selected manufacturing companies on the NSE listing ranging over five years from 2011-2015. Some of the influences of variables on the management of operational capital include; current ratio, debt ratio, cash conversion period, accounts payable time, accounts receivable time, inventory ratio and liquidity will be used for analysis.

### 1.1.1 Working Capital Management

Performance management influences mainly the firm's administration of both current assets and liabilities. Financial choices that are extended have been the main concentration of corporate finance, and they include, firm's assessments, the choices for investment, dividend guidelines and the structure for the capital. Smith (1980) determined short-term assets as those assets whose life expectations are planned to be decided after a financial year, and they are also said to be a firms current assets. The above mentioned short-term assets and liabilities are vital components to the overall assets, and should therefore be meticulously and methodically investigated due to the pivotal part they play in the company's profitability, worth and risk.

For a manufacturing firm, the cycle of cash conversion indicates the length of time it requires for an investment in raw materials to be ultimately realized as a cash receipt after sale of the manufactured product. This series could be broken into several time points. The period of time it takes: Between ordering and receipt of raw materials, for trade creditors to be paid, for finished goods held in stock to be sold. Assuming no time lag between the raising of sales and purchase orders and their execution the cash conversion cycle can be determined by:

CCC = Operating Cycle (OC) – Average Payment Period (APP)

Or

CCC = AAI + ACP – APP

A wide and refined understanding into the expertise of capital management that is operational is identified by a maximum level of assets, payables and receivables, whereby overall stocks and cost of opportunities are reduced and cycles of cash exchange revaluated. In as much as the flows in financials emanating from the stocks and receivables is considered by the operating cycle, it greatly ignores the flows in financials emanating from the accounts payable. In this situation, (Richards and Loughlin 1980) indicates that the cycle of cash exchange that looks at all important movement of cash emanates from the performance. According to Gentry, Vaidyanathan, and Wai (1990) they proposed a cycle of conversion that is weighted which considers as well both the financial movements and the sum of money allocated to the stages of each cycle.

### 1.1.2 Financial Performance

Over time, the degree of the firm's performance can be described in terms of overall loss and profit. Analyzing the firm's administrative performance makes it possible for decision-makers to evaluate the outcome of business plans and actions in an impartial financial term. The term financial performance outlines the level to which the financial goals are achieved or being achieved, and is pertinent to the management of financial risk. It is the procedure of analyzing the outcome of the company's guidelines in financial terms, and also utilized to evaluate the general financial well-being of the firm, while at the same time contrasting companies in the same industry (Eshna, 2012).

Questions concerning the financial status of a company are of major interest to companies, administrators, stockholders, lenders, and tax authorities. These can only be answered by undertaking a financial evaluation of a company, and this includes the utilization of financial statements. These financial statements refer to a compilation of

information arranged under a rational and coherent accounting routine. The main function of these statements is to impart a comprehension of some of the company's financial factors. As in the matter concerning Balance Sheet, it may indicate the financial status, and a sequence of actions as in the matter concerning an income statement. The above two indicates to an overall financial statement (Eshna, 2012).

### 1.1.3 Relationship between Working Capital Management and Financial Performance

A company's management of the working capital has become identified as a significant aspect of financial management. The procedures of managing working capital comprises of decisions on the sum and a combination of current assets, and how to fund them. It also includes decisions on facets of cash investments, the preservation of a particular level of assets and administering receivable and payable accounts. The management of working capital main objective is to arrive at and maintain a maximum balance amid every part of the working capital (Gitmen, 2009).

The accomplishment of a business hugely relies on the financial administrators capability to efficiently supervise the payables, the list of assets and receivable (Filbeck and Krueger, 2005). The funds to be utilized for expanding projects can either be decreased or increased by companies through reducing the amount held up in the current assets. A good amount of time and effort have been set aside by financial administrators to elevate the degrees of current assets and liabilities, from minimal to best (Lamberson, 1995).

According to Van Horne and Wachowicz (2004), an excess degree of current assets bears an adverse impact on the profitability of the company, while on the other side a low degree might lead to weak levels of liquidity causing problems while sustaining a smooth performance. Conventional ideas on working capital are the net of current assets and liabilities. The idea of corporate liquidity is not represented precisely by the above definition due to the fact that the constituents of working capital have varying degrees of liquidity, as some have a financial characteristic with a liquidity that is high, while others have a non-financial characteristic with a liquidity that is low. Therefore, the working capital can be classified in financial and non-financial.

According to Shalman and Cox (1985) financial components was divided into Net Liquidity Balance (NLB), and non-financial into Working Capital Requirement (WCR). The liquidity however, of NLB varies from that of WRC they are in any case they are connected. An example of this is the reductions in time of receivable accounts, will only reduce WCR and NLB at the same time increasing the value of cash. A short term guarantee of time can be performed by organizations in the event of a high sum of working capital therefore, an effective management of capital market influences short term performance, together with long term performance.

### 1.1.4 Manufacturing Firms in Kenya

Manufacturing can be defined as a variety of human actions aimed at the application of industrial manufacture, whereby raw material are turned into finished products at a huge scale. It involves adding value to a product intended for sale or utilization. The same finished products can be used to manufacture other complicated products. In Kenya, the

manufacturing industry has continued to develop since the late 1990's and the country has a location advantage as the portal and a launching platform to markets in countries in East Africa that are landlocked. There are about 177 manufacturing firms Kenya. Some of the more common manufacturing companies include; Agricultural and Horticultural products, Small-scale consumer goods like plastics and textiles, Aluminium, Cement, Oil refinery and Lead.

### 1.2 Research Problem

The management of working capital is pertinent due to its influence on the financial performance of the company, its risk, and therefore its worth (Smith, 1980). The maintenance of high degrees of inventory decreases the cost of potential interruptions in the process of production, or losing the business because of scarce products, reduction in the cost of supply, and guard against price variations, and other benefits (Blinder and Manccini, 1991). The bestowment of trade credit supports the sales of the company in many ways. They act as an efficient method for price reduction, (Brennan, Maksimovic and Zechner, 1988; Petersen and Rajan, 1997), encourages clients to obtain goods when the demands are low (Emery, 1987), enables the clients to examine the goods received and guarantee that the services agreed upon have been conducted (Smith, 1987), and finally, assists companies to establish strong connections with their clients (Smith and Smith, 1999). The accomplishment of a business hugely relies on the financial administrators capability to efficiently supervise the payables, the list of assets and receivable (Filbeck and Krueger, 2005).

It is important for manufacturing companies to have sufficient administration of working capital. This is largely due to the reason that insufficient working capital to insure its responsibilities will often lead to financial insolvency, which is the inability to pay their debts, legal issues, liquidation and possible bankruptcy. The management of working capital is basically a procedure for accounting with a primary concern on the preservation of an adequate equilibrium between the current assets and liabilities of a firm. A working capital management that is efficient permits manufacturing companies to both insure their financial responsibilities and increase their profits. Management of working capital often indicates the management of accounts payable, receivables and finally inventories. The utilization of significant performance ratio by the working capital like the collection ratio, the working capital ratio, and inventory turnover ratio are usually to assist in the identification of sections that need attention so as to preserve liquidity and profitability.

### 1.3 Objective of the study

The goal for this research is to establish the relationship between the management of working capital and financial performance of manufacturing companies in Kenya.

### 1.4 Value of the Study

In the vent that a firm has insufficient working capital to insure its responsibilities will often lead to financial insolvency, which is the inability to pay their debts, legal issues, liquidation and possible bankruptcy. It is therefore important for manufacturing companies to have sufficient administration of working capital.

This research is anticipated to give a more improved comprehension of the guidelines for the formulation of plans on the administration of working capital and its effects on profitability particularly in Kenya's emergent markets.

The results of the research will equally be of importance to administrators in companies when deciding what strategies to use concerning the management of working capital for the purpose of improving the company's performance. With changes in business conditions especially economic conditions, the study will give insight into the effective way of managing working capital for firms to improve performance. It will also help policy makers to put in place new policies and regulations concerning working capital management.

# CHAPTER TWO: LITERATURE REVIEW

## 2.1 Introduction

In chapter two, we shall examine the studies that had been conducted by other researchers along this topic. The chapter will address; various theories of Working capital management, empirical literature, determinants of financial performance, conceptual framework and Summary of the literature. A number of researchers have analyzed the management of working capital and financial ratios as a part, in any event, few have analysed the specifics of working capital guidelines. An examination of management of working capital guidelines in 32 industries that are non-financial in the United States of America was done by Filbeck and Krueger (2005) and they emphasized the significance of an effective management of working capital. A major distinction was exhibited in the outcomes of the study between industries that have for a long time been practicing working capital.

## 2.2 Theoretical Literature

This chapter will discuss relevant literature on management of working capital and how it relates to financial performance of manufacturing firms. This hence will build an understanding on the theme of the study. Various theories have been considered on working capital management, they include: cash conversion theory, transaction cost economic theory operations cycle theory and resource based theory and are explained below.

## 2.2. Cash Conversion Cycle Theory

This theory depicts the interface amid the constituents of working capital and the cash flow within a firm, and it can be utilized to decide on the sum of money required for any degree of sales. This theory is utilized as an inclusive evaluation of working capital due to its ability to showcase the time delay between the amounts spent for purchasing the raw materials and when the cash for the finished products was being collected (Padachi, 2006). When a company's short term assets and liabilities are continually managed, this will eventually participate in the accomplishment of the company. It is believed that those firms whose long term views are developing and have a sound bottom line often cannot be able to pay all debts the good management of liquidity (Jose and Lancaster, 1996).

The cycle of cash conversion was built by Gitman (1974) as a component of operating cycle which can be computed through the addition of inventory period to the period of accounts receivable, and later making a subtraction of the accounts payable. The main concern is on the amount of time between obtaining the staple material and the influx of money from the selling of finished products. It also corresponds to the amount of days of planned activities in which financing is required. According to (Jose and Lancaster, 1996), the cycle of cash conversion of CCC compounds both the information on the statement of income and the balance sheet to make quantification with time measure, and this is functioning assessment of management of liquidity. The accurate method hence is to make a comparison of a particular company to the establishment to which it works within (Hutchinson, 2007). The length of the CCC is provided by;

CCC = Inventory days + Trade receivables days − Trade payables days

As Arnold (2008) found out, the more brief the CCC is, the less resources required by a firm, and the more extended the CCC is, then the investments will be complicated. An extended CCC however could cause a growth in sales thereby leading to a high profitability. This extended CCC on the other hand would also cause high investments and could continue to incline further than the advantages of the elevated profitability.

### 2.2.2 Transaction Cost Economics Theory

This theory references to the transaction as the fundamental unit of evaluation and maintains that the comprehension of cutting back transactional cost will be pertinent to the examination of companies. This theory can be enforced both to the decisions of an effective delimitation as exists between companies and the market and the arrangement of internal transactions. The determination of a maximum degree of inventory should be done based on an exchange between the costs and advantages connected with the degree of inventory. The cost of ordering and the carrying costs are comprised in the holding cost of inventory. The ordering costs is connected to the purchase of inventory, which is inclusive of the preparation of a purchase form, reception, examination and registering the products accepted.

On the contrary, the cost of carrying includes the maintenance of inventory and comes about because of the cost of storing inventory and other opportunity costs. A number of reasons exist for the high and low degrees of inventory and these reasons is dependant highly on the type of business the firm is in. One of the simplest reasons for the

management of inventory is the cost, which is established on theory of Transaction Cost Economics (TCE) (Emery and Marques, 2011). For the companies to have a competitive vantage point, they must reduce their costs, and they can achieve this through maintaining the costs of inventory at a logical low degree.

### 2.2.3 Operating Cycle Theory

Richards and Laughlin (1980) developed this theoretical approach were they focused their attention at looking at management of working capital and its individual elements. The liquidity flow concept development is through the extension of the analysis of static balance sheet to identify the capability of liquidation coverage of the value including measures of income statement of the operating activity of a firm. Specifically, receivable accounts and measures of the inventory turnover when incorporated into the concept of operating cycle gives a more precise perception of management of liquidity than the solvency indicators which are the current and acid taste ratio.

Westen and Eugene (1979) sys that the extra measures of liquidity have a clear understanding that anticipations of life of some components of working capital is dependent on how much production, distribution and collection are either un-synchronized and non-instantaneous. The frequency of conversion of receivable investment that is of average into cast through an indicator-account receivable turnover. when policies in collection and credit change, the average of the distinguished receivable balance that annual sales of a firm relatively maintain is impacted. When more liberal terms are granted by a company, there is creation of a large and likely less liquid, receivable current investment in customers except when there is a proportionate increase

in sales that makes receivables increase. Liquidity that is potentially deteriorating is reflected by receivable turnover that is lower and a receivable collection period that is extended. A firm will attain higher ratios in currency and acid-test though choices that aim at maintaining larger average receivables investments with time (Richards and Laughlin, 1980). Operating cycle length of a company is approximated by turnover cumulative days for receivable accounts and investment inventory. When these turnover assets are incorporated into the concept of operating cycle of the conversation period of current assets providing a liquidity indicator of the firm that although incomplete, is more realistic.

### 2.2.4 Resource Based Theory

The survival of business and profitability of entity is based on resources, whether human or material. There is need for differentiating capabilities from resources when company stock resources are being taken. Resources are a vital analyzing unit since they are production process unit. Examples of resource that a company possess include capital equipment, employee skills, brand names, patents, finance etc. when firm operate independently, its productive resource are few. If resources will be productive there that to be team cooperation and coordination, which is shown by the teams' capability to act on a variety of tasks. Thus, as put across by Grant (2001), a company's capability is defined by available resources. This model is inclusive of individual manager's cognitive ability to make sure that short-term working capital is managed effectively (Alvarez & Busenitz, 2001). Therefore, any company manager contain resources that are individual-specific that aim at facilitating and ensuring new opportunities are recognized, that the resources are effectively assembled, payments being mad are psyched and receivable

recovering as a way of making sure that working capital is effectively managed and thus the company's profitability.

### 2.3 Empirical Literature

Empirical literature discusses what other scholars have discussed based on the general objective of the study. A lot of researches have been conducted studying working capital from a variety of angles and spheres. The ones outlined below were practical to our study. According to Eljelly, (2004), he clarified that an effective management of liquidity includes the planning and the control of both current assets and liabilities in a way that gets rid of the uncertainty of being unable to accomplish short terms responsibilities that are due, and prevents making extreme investments on the assets.

The connection between liquidity and profitability was assessed, as computed by the current ratio and the gap in cash on a sample unit of connected equity firms through the utilization of the regression analysis and correlation on Saudi Arabia. The research identified that the cycle of cash exchange was of more significant as an evaluation of liquidity than on the current ratio that impacts profitability. The variable of size was identified to bear a more important impact on profitability at the level of the establishment. The outcomes were steady, and bore significant effects for the management of liquidity in a number of Saudi firms. In the Saudi sample analyzed, at first, it was evident that there existed an adverse connection between profitability and the signals for liquidity like current ratio, and gap in cash.

The research indicated a high degree of diversities between companies, while talking about the assessment of liquidity. According to (Deloof, 2003), he indicated that a lot of companies had a great sum of money invested in the working capital. We can hence expect, that with this kind of management of the working capital, it will have an important effect on the company's profitability. Through the utilization of the regression analysis and correlation, an important adverse connection was discovered between gross operational income and the amount of days, the accounts receivables, the inventories, and the accounts payable of companies in Belgian. Based on the outcomes above, he proposed that the administrators could make value for their stockholders through the reduction of the amount of days, the accounts receivable, the inventories, and the accounts payable, to a logical minimum. The adverse connection between the accounts payable and the profitability of a company is coherent with the outlook that companies that make less profits wait for longer periods prior to making payments on their bills.

A suggestion was made by Filbeck and Krueger (2005) that companies ought to be able to make a reduction in the cost for financing and or make an increase in the cash attainable for expanding the firm through the minimization of the sum of cash help up in current assets. Significant variation and changes were uncovered in the assessment of working capital between establishments beyond time. An evaluation of the connection between working capital and the profitablility of pharmaceuticals firms in India was done by (Chakraborty, 2008). He made an indication of the two different schools of thoughts on this particular matter; in one of them, the concept of working capital is not a factor for enhancing profitability and an adverse connection may exist between them. In the other,

investments in the working capital is important in enhancing corporate profitability, and not before there is a least amount of investment of working capital, then products and sales cannot be well kept. An examination of the strategic management of working capital and its function in the development of corporate strategy was done by Chakraborty and Bandopadhyay (2007), which in the end ensured the company's survival. The multidimensional effect of the decisions of the strategic current assets and decisions of the strategic current liabilities on the firm's performance was emphasized.

Researchers within our country have also researched the management of capital management and financial performance. An observation was made by Nyakundi (2003), on the guidelines of the management of working capital amid Kenya's public firms. Through utilizing a simple linear regression, he came to a conclusion that there existed no connection between the management of working capital and profitability. A study conducted by Kithii (2008) analyzed the connection between the management of working capital and profitability of firms on the NSE listing. Through using a Pearson's moment correlation of co-efficient, she uncovered an important adverse connection between the cycle of cash exchange and profitability. Mutungi (2010) studied the connection between management of working capital and the financial performance of Kenyan oil marketing companies. From the correlation analysis, the study concluded an existence of aggressive working capital policy in the oil sector. A study conducted by Mathuva (2010), discovered conflicting proof with the supervision of inventories in Kenya. He according to him, firms their levels of inventories so as to make a reduction in the cost of potential halt in production, and the probability of insufficient staple material. Also, a high level of

inventory makes a reduction in the cost of supply and guards against varying price changes induced by changing factors in the macroeconomic.

### 2.4 Determinants of Financial Performance

The performance of a company is significant not only to the investors, but also to the shareholders and the overall economy. Returns on the investments are of great value to the investors, and a company that is performing exceptionally, will bring high and long term profits on their investments. Apart from that, the profitability of a firm, in terms of financial, will eventually benefit its employees, and bring about an improved quality of their products to their clients. The more a company acquires profits, the more the investments, thereby leading to increased employment opportunities and improve their income. A number of research have been conducted so as to identify the variety of financial components of performance, but up to now, no model has been identified that can capture the utmost degree of diversity. The determinants involved in financial performance can be said to comprise of management of risk, the arrangement of ownership, the structure of capital and liquidity, and finally, the company's policies attributes.

#### 2.4.1 Risk Management

The outcome of the firm usually stipulates the worth of the market, and the degree to which the firm is exposed to uncertainties will lead to alteration of the market value. This will impact on a firm's performance. Firms that take a lot of risks, will at most times only draw in clients who love to take risks. It will be fair if risk and returns are managed for

investors to get that return which is connected and anticipated with the uncertainties which they have.

### 2.4.2 Firm Characteristics of Policies

There are particular traits of a company that are connected to high performance. These traits are inclusive of the size, the rate of growth, dividends, liquidity and sales. Big companies draw in better qualified administrators and employees who then make a contribution to the performance of the company. In as much as many researches have been carried out on the individual determining factor of a company's performance, very few have accounted for all the components. A study was conducted byYasseret al. (2011), examining the impact of board characteristics on the performance of a company, and Wahla et al.(2012) assessed the effect of the structure of ownership on the performance of a company.

### 2.4.3 Ownership Structure

As discussed above on the theory of agency, if the company's administrators owned equity in the firm, then they would be more inclined to increase the returns of the stakeholders (Dutta, 1999). According to Jensen et al. (1992), the diversification of administrators could prove to be costly. This theory of the structure of ownership has been examined empirically on a variety of incidents, and it turned out that the internal ownership usually resulted in the long term performance of a company (Reddy, 2010)

### 2.4.4 Capital Structure

This is among the most significant components which influences the generation of funds. In every establishment, a good amount of resources be it land, capital employment or labor is needed. The ratio of debt and equity financing is referred to as the capital structure. In the event that a company utilizes more debt to finance, then it becomes at risk of facing bankruptcy.

### 2.4.5 Liquidity

This term is used to depict the ease at which assets can be converted to cash. Due to the ease with which money can be utilized it is hence described as the most liquid asset. For a firm to run smoothly, a certain sum of cash is needed so as to handle sudden costs, make their usual payments, and purchase staple material that is utilized in production. According to Smith, 1980; Raheman and Masr, (2007), the quandary that arises from the management of working capital is the desire to attain the longed for tradeoff between liquidity and the profitability of the company.

Pertaining to the risk and return theory, the more risky the investment is, then the more profit it will yield. Therefore, companies that have an elevated level of liquidity of working capital may bear low uncertainties and low profitability. In contrast, firms that bear a depleted level of liquidity of working capital, face a high level of uncertainty therefore resulting in a high financial performance.

## 2.5 Conceptual Framework

The conceptual frame work of the study will be derived as per the views of different authors. According to Encyclopedia Britannica (2010, a conceptual framework ascribes to a number of concepts that are extensively explained, arranged in order to give focus, rational and an instrument for blending and explanation of information, and is at most times describes in abstract via word models). On this study the conceptual framework involves the connection between management of working capital and financial performance of manufacturing companies. The above literature review led to the following conceptual model, that show the connection between the independent variable (Working Capital Management) and the dependent variable (Financial Performance of Manufacturing Firms)

**Independent variable** **dependent variable**

Working capital management

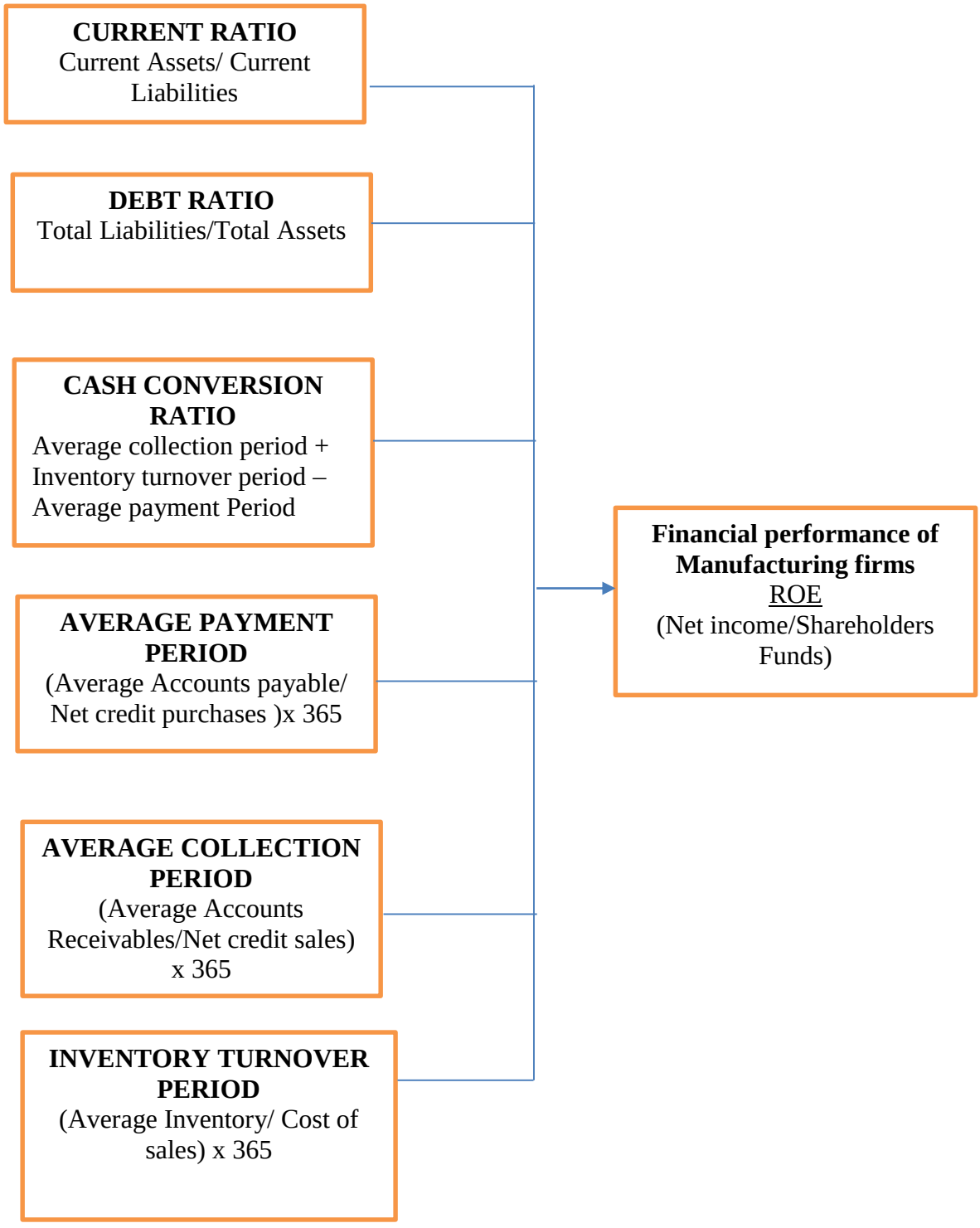


**Figure 2.1 Conceptual framework**

## 2.6 Summary of the Literature

The literature reviews in this chapter present an elaborate and detail linkage between the dependent and independent variables in the study. Risk management, Firm characteristics of policies, Ownership structure, Capital structure and liquidity management are supported by planning; controlling indicators that will be viewed as elements of profitability and that management of the working capital has a direct relationship with a company's financial performance.

However, no research from the literature has been capable to create a structure that will help administrators to develop a maximum working capital under a variety of establishments. The literature and the research instead indicates an efficient level without unavoidably indicating the same degree or how to establishing it. Not a lot of researches have been carried out in the overall situation of Kenya that touches on the management of working capital; according to the empirical studies it indicates that not a lot has been done to settle on the connection between working capital and financial performance.

# CHAPTER THREE: RESEARCH METHODOLOGY

## 3.1 Introduction

In this chapter, the research design and methodology that was utilized to meet the objectives of the study are presented. It stipulates the systematic research procedure and techniques the researcher applied when collecting and analyzing the data. These steps include; research design, target population, the techniques for collecting data, analyzing data and presentation and variables.

## 3.2 Research Design

The research adopted a descriptive research design. Descriptive research case study is used to develop snapshots of specific observable events of concern, because big samples are at most times involved. This involved a meticulous planning of events so as to depict what is taking place or what took place. It is mostly applicable where the aim of the study is to depict the attributes of particular items, and make estimations of the size of individuals who conduct themselves in particular ways, and develop certain prognostications. The design is ideal for this study given the need to collect information on the connection between working capital and profitability, (Orodho, 2009).

## 3.3 Target Population

The target population of the study will be 177 manufacturing Firms in Kenya (Appendix 2).

### 3.4 Sample

According to (Nachmias & Nachemias, 2004), the researchers usually chose a sampling unit based on his feelings and thoughts so as to attain a portion that seems to be a representative of the entire population. In this case, the probability of a certain unit being chosen as a sample relies on the judgments of the researchers that are subjective. To arrive at the representatives sample of the study by Cochran( 1963) later simplified by Yamane (1967) will be used.

The formula is $n=N/1+N\ (e)^2$

Whereby n represents the size of the sample, N representing total the size of the population, and e being the degree of accuracy which is at a 95% level of confidence.

Then the sample size of the study will be ,

$n=177/1+177(.05)^2$ n=123

### 3.5 Data Collection Procedures

In this research, secondary data was utlized. Jewel (2001), indicated secondary data as information that was collected for other reasons other than the primary one and may require adjusting and validating prior to being utilized. All the information that was collected by review of documents, annual reports of the manufacturing firms and published books of accounts, therefore financial information of manufacturing firms in Kenya was derived out of the balance sheets and income and expenditure statements and other relevant document. Data collection form (See appendix 1).

### 3.6 Data Analysis and Presentation

The information gathered was assessed through quantitative data analysis techniques so as to determine the degree to which the main study variables are related namely Current ratio, Debt ratio, and cycle of cash conversion, Average period of Payment, period of Inventory turnover and period of Average collection. Whereas qualitative technique was used for analyzing the on inferential statistics, the quantitative techniques will be use of descriptive statistic. In addition, the data that was collected was subjected to thorough screening to ensure normality, coded and tabulated for easy understanding, for example the researcher organized, edited and interpreted qualitative data, so as to examine, describe and compare the associations and relationships between the main indicators of the study variables. The statistical package for social sciences (SPSS) was used to establish the actual relationship between the two sets of study variables .The researcher ensured that the appropriate and relevant statistical techniques was used to analyze each item ( Saunders et al, 2008) .

The ANOVA technique in the study determined the effect of the model $\infty 0.05$ level of significance. Quantitative analysis of data was used since it well suits secondary data ( Leavy , 2004) .The financial ratios for both the independent and the dependent variables was computed through SPSS to get the results. Data was represented using tables and regression analysis was used for conclusions.

The researcher used the multivariate regression model below to analyze the data.

$$\mathbf{Y= \beta_0+\beta_1X_1+ \beta_2X_2+\beta_3X_3+ \beta_4X_4 + \beta_5X_5+ \beta_6X_6 +}$$

Where **Y**=is the Return On Equity to measure financial the performance of manufacturing firms

$\mathbf{X_1}$= Current Ratio

$\mathbf{X_2}$= Debt Ratio

$\mathbf{X_3}$= Cash Conversion Ratio

$\mathbf{X_4}$= Average payment Period

$\mathbf{X_5}$= Inventory turnover period

$\mathbf{X_6}$ =Average collection Period

$\boldsymbol{\beta_0}$= Constant term,

$\boldsymbol{\beta_0}$------$\boldsymbol{\beta_6}$= was used to measure the dependent variable (Y) to unit change in the predictor variables.

$\boldsymbol{\varepsilon}$ =is the error term for all variables influencing performance

Significance tests: at 95% confidence level or at 5% degree of significance.

# CHAPTER FOUR: DATA ANALYSIS, INTERPRETATION AND FINDINGS

## 4.1 Introduction

In this chapter, a descriptive and conclusive assessment of data is provided. This was utilized to help the study in describing relevant aspects of the phenomena which are being considered. An estimation of the connection between the management of working capital and financial performance of manufacturing firms are made by the regression. Also the chi square test statistics was used in examining if working capital management is suggestively distinctive from that of the company's financial performance.

## 4.2 Descriptive Statistics

It was necessary to evaluate performance of the firm's performance valuables which were being considered; debt ratio, current ratio, period of average payment, period of average collection, period of inventory turnover, ratio of cash conversion, assets to total assets and return on shareholders' funds.

**Table 4.1: Summary of the Statistics of performance Variables**

| | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|
| Financial performance of Manufacturing firms | 0.0043 | 0.9649 | 0.283283 | 0.2221842 |
| Current ratio | 0.1865 | 10.0893 | 2.251799 | 2.0834383 |
| Debt ratio | 0.0133 | 0.9410 | 0.475201 | 0.2326585 |
| Average payment period | 19.4391 | 836.6173 | 216.968032 | 216.7585914 |
| Average collection period | 7.7200 | 188.3273 | 78.721106 | 41.4959629 |
| Inventory turnover period | 9.5916 | 210.5432 | 75.869004 | 53.4828179 |
| Cash conversion ratio | 23.4528 | 99.8406 | 65.119749 | 17.3488128 |

Table 4.1 shows summary statistics of all variable utilized in the model. It provides information on mean and the standard deviation per variable. From the findings Current ratio and debt ratio are averagely 2.25 and 0.475 respectively, average payment period was (217 days), average collection period (79 days), inventory turnover ratio (76 days), cash conversation ratio was 65 days, while overall return on equity was 0.28.

**Table 4.2: correlation Analysis**

| | | Current ratio | Debt ratio | Average payment period | Average collection period | Inventory turnover period | Cash conversion ratio | Financial performance |
|---|---|---|---|---|---|---|---|---|
| Current ratio | Correlation | 1 | -.584 | -.098 | -.029 | -.204 | .089 | .349 |
| | Sig. (2-tailed) | | .000 | .497 | .842 | .156 | .538 | .013 |
| Debt ratio | Correlation | -.584 | 1 | .173 | -.053 | .244 | -.163 | -.273 |
| | Sig. (2-tailed) | .000 | | .228 | .716 | .087 | .258 | .055 |
| Average payment period | Correlation | -.098 | .173 | 1 | -.112 | .052 | -.999 | -.164 |
| | Sig. (2-tailed) | .497 | .228 | | .437 | .720 | .000 | .256 |
| Average collection period | Correlation | -.029 | -.053 | -.112 | 1 | -.292 | .105 | -.064 |
| | Sig. (2-tailed) | .842 | .716 | .437 | | .040 | .467 | .660 |
| Inventory turnover period | Correlation | -.204 | .244 | .052 | -.292 | 1 | -.009 | .146 |
| | Sig. (2-tailed) | .156 | .087 | .720 | .040 | | .952 | .312 |
| Cash conversion ratio | Correlation | .089 | -.163 | -.999 | .105 | -.009 | 1 | .170 |
| | Sig. (2-tailed) | .538 | .258 | .000 | .467 | .952 | | .238 |
| Financial performance | Correlation | .349 | -.273 | -.164 | -.064 | .146 | .170 | 1 |
| | Sig. (2-tailed) | .013 | .055 | .256 | .660 | .312 | .238 | |

Correlation is statistically significant at 0.05 levels.

Table 4.2 indicates the correlation analysis among the manufacturing firm's financial performance variables. The result shows that manufacturing firms financial performance variable on current ratio has a positive significantly association (Pearson Correlation=0.449, Sig.=0.013), average payment period with positive correlation of (Pearson Correlation=0.640, Sig.=0.025), inventory turnover period with negative (Pearson Correlation= -0.707, Sig.=0.012) and cash conversion ratio with positive correlation of (Pearson Correlation=0.570, Sig.=0.038).

### 4.3 Regression Analysis

The researcher utilized generalized multivariate linear regression model to identify whether a statistically significant connection exist between the management of working capital variables and financial performance of manufacturing firms in Kenya. The regression equation was therefore:

**Table 4.3: Goodness of fit**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .758[a] | .628 | .721 | .2051312 |

The generalized regression deviance goodness of fit indicates that the regression equation has a good fit since the R-square indicate the model can explain 62.8% of the error term. The regression parameter coefficients table and equation was therefore:

**Table 4.4: Parameter Estimates**

| | | | 95% Wald Confidence Interval | | Hypothesis Test | |
|---|---|---|---|---|---|---|
| Parameter | B | Std. Error | Lower | Upper | Wald Chi-Square | Sig. |
| (Intercept) | -0.054 | 0.1446 | -0.337 | 0.230 | 0.138 | 0.710 |
| Current ratio | 0.690 | 0.0320 | 0.006 | 0.131 | 4.599 | 0.032 |
| Debt ratio | 0.250 | 0.0159 | -0.062 | 0.563 | 2.476 | 0.116 |
| Average payment period | 0.038 | 0.0061 | 0.026 | 0.056 | 0.132 | 0.016 |
| Average collection period | 0.649 | 0.0076 | -0.002 | 0.001 | 0.737 | 0.391 |
| Inventory turnover period | -0.003 | 0.0011 | 0.005 | 0.0130 | 5.431 | 0.020 |
| Cash conversion ratio | 0.465 | 0.0021 | 0.001 | 0.009 | 4.992 | 0.025 |

From table 4.4 above, when all factors are taken into account current ratio (B=0.690, Sig.=0.032), average Payment Period (in Days)(B=0.038, Sig.=0.016), inventory turnover period(B=-0.003, Sig.=0.020) and cash conversion period(B=0.465, Sig.=0.025)had a statistically important influence on the financial performance of manufacturing companies. The Standardized Beta Coefficients (B) gives a unit measure of each variables contribution in the model. The larger the Standardized Beta Coefficients (B) implies a bigger influence per unit change on financial performance of manufacturing firms. The 95% Wald confidence interval and Sig. (p values) show significance at 0.05 level of importance of each predictor variable.

The model for the financial performance of manufacturing firms from the regression equation that indicates the contribution in the model by each of the independent variables is;

Financial performance = -0.054+0.690current ratio+ 0.250debt ratio+0.038average payment period+ 0.649average collection period- 0.003 inventory turnover period+ 0.465cash conversion ratio

**Table 4.5: Working capital management verses financial performance of firms**

| | Financial performance of firms |
|---|---|
| Working capital management Pearson correlation | 17.700 |
| Sig.<br>N | 0.007<br>10 |

A Pearson coefficient of 17.700 and p-value of 0.007 shows a strong, significant, positive dependence between management of working capital and the financial performance of Kenyan companies. Therefore, centering on these results the research fails to

acknowledge the existence of a null hypothesis and that there is no connection between working capital management and financial performance of companies in Kenya and accepts the alternative theory that there exists an association between working capital management and the financial performance of Kenyan companies.

# CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Introduction

This chapter summarizes the study and creates deductions based on the findings uncovered. Suggestions from the results and the fields of additional studies are presented. The section presents the results from the research in comparison with what was noted by other researchers in the literature review.

## 5.2 Summary of Findings and Interpretations

The study utilized two kinds of data analysis tools i.e. descriptive analysis, and inferential analysis. Descriptive analysis describes the relevant aspects of the phenomena (mean, standard deviation, maximum and minimum) being considered and indicates itemized data about every important variable. Inferential analysis, the study employs Pearson correlation, the generalized multivariate linear regression analysis and the Chi-square statistics. Initially the study determined the performance of the financial performance variables under consideration that were debt ratio, current ratio, period of average payment, period of average collection, period of inventory turnover, ratio of cash conversion. Their mean, standard deviation, minimum and maximum values were determined.

The Pearson correlation result shows that manufacturing firms' financial performance has statistically significant association on current ratio, period of average payment, period of average collection, period of inventory turnover, ratio of cash conversion.

The results indicated that account current ratio (B=0.690, Sig.=0.032), average Payment Period (in Days) (B=0.038, Sig.=0.016), inventory turnover period(B=-0.003, Sig.=0.020) and cash conversion period (B=0.465, Sig.=0.025) had a statistically significant influence on the financial performance of manufacturing companies.

Evaluating whether management of working capital has a relationship on financial performance of manufacturing companies in Kenya. A Pearson coefficient of 17.700 and p-value of 0.007 shows a strong, significant, positive dependence between management of working capital and the financial performance of Kenyan companies. Therefore, centering on these results the research fails to acknowledge the existence of a null hypothesis and that there is no connection between working capital management and financial performance of companies in Kenya and accepts the alternative theory that there exists an association between working capital management and the financial performance of Kenyan companies.

### 5.3 Conclusions

The research scrutinized the relationship between management of working capital and financial performance of manufacturing firms in Kenya. Information was analyzed utilizing both descriptive and inferential statistics for the period of 2011 to 2015. Current ratio, Average payment period, cash conversion cycle shows significant positive influence on Return to Equities. Inventory turnover has negative statistical relationship with Return on Equities. This shows that decisions made on how to manage current assets and liabilities will affect financial performance of manufacturing firms in Kenya.

### 5.3 Policy Recommendations

The research advocates that companies ought to involve a good relationship with those companies which offer periods of long credit and clients with period of short payment. The study also advocates that there be an appropriate system of managing inventory to prevent overstocking of inventory which could result in efficient outcome in manufacturing firms. All of the above will truncate the cycle of exchanging cash, which will result to improved profitability. The study also recommends that manufacturing firms should administrate their working capital competently for them to acquire maximum profitability.

### 5.4 Limitations of the Study

The main objective of the research was to determine the influence of the management of working capital and financial performance of manufacturing companies in Kenya, due to this most companies considered some of the information too sensitive and confidential and thus were not convinced that the research was just for academic purposes only and may not be used for other purposes.

The findings of the study may be used as a reference to manufacturing companies in developing countries since they face almost the same challenges due to prevailing economic situations as opposed to challenges faced in developed countries. Because working capital keeps on changing from one period to another as per prevailing economic situations, the findings may not truly reflect the influence of the management of working capital and financial performance for the period under review. Firms should file their financial returns annually to the registrar of companies, where those who need such statements can easily access them. Another major limitation was that the study found

financial statements for years 1997 – 2001 from the registrar of companies, due to changes in economic circumstances; the study didn't use such information.

### 5.5 Suggestion for Further Studies

There is need to carry out studies on the management of working capital and financial performance of manufacturing companies but incorporate more financial variables such as Return on Assets, cash to current assets and also consider economic situations in the country. Further studies should also be carried for a longer time period, as this will help in detecting developments or changes in characteristics of the population and sequence of events. In addition, both private and public companies should be obliged legally to provide information especially that required for academic purposes as this will give more evidence to policy makers to make necessary commendations.

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**APPENDIX 1: Data collection Form**

| YEAR | Current Assets | Current Liabilities | Profit After Tax | Total Liabilities | Total Assets | Average Accounts Receivable | Net Credit Sales | Average Accounts Payable | Net Credit Purchases | Average Inventory | Cost of sales | Shareholders Funds |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2011 | | | | | | | | | | | | |
| 2012 | | | | | | | | | | | | |
| 2013 | | | | | | | | | | | | |
| 2014 | | | | | | | | | | | | |
| 2015 | | | | | | | | | | | | |

**APPENDIX 2: Manufacturing Firms in Kenya**

1 42 Geomatic Services Ltd
2 A.Baumann co. Ltd
3 Abu Engineering Ltd
4 Acme Container Ltd
5 Adhesive Solutions Africa Ltd
6 African Kaluworks (Aluware)Division
7 Africa Cotton Industries
8 Africa Oil Kenya B.V
9 Agni Enterprises Ltd
10 Ali Glaziers Ltd
11 Alpha Dairy Products Ltd
12 Alpha Fine Foods
13 Apex Steel Ltd
14 AquaSan Tec
15 Aquva Agencies Ltd
16 Arrow Rubber Stamp Company Ltd
17 Artech Agencies (KSM)Ltd
18 Ashut Quality Products
19 ASL ltd
20 Athiriver Mining Ltd
21 Atlas Copco Eastern Africa Ltd
22 Bamburi Special Products Ltd
23 Beta Health Care
24 BIDCO Oil Refineries Limited
25 Bilco Engineering
26 Biodeal laboratories Ltd
27 Blowplast Limited
28 Blue Ring Products Ltd
29 Blue Triangle Cement
30 Bobmil Industries Ltd
31 Bogani Industries Ltd
32 Bosky Industries Ltd
33 British American Tobacco Ltd
34 B.O.C Kenya Ltd
35 Carbacid Investiments Ltd
36 C. Dormans Ltd
37 Chandaria Industries Ltd
38 Chemplus Holdings Ltd
39 Chevron Kenya Ltd
40 Chloride Exide Kenya Ltd
41 Climacento Green Tech Ltd
42 Colgate Palmolive (East Africa) Ltd
43 Collis F B
44 Commercial Motor Spares Ltd
45 Cosmos Ltd
46 Creative Fabric World Co Ltd
47 Creative Innovations Ltd
48 Crown Berger (K) Ltd
49 Cuma Refrigeration EA Ltd
50 Doshi Group of Companies
51 East Africa Glassware Mart Ltd
52 East Africa Breweries Ltd
53 East Africa Cables Ltd
54 East African Portland Cement
55 Eastern Chemical Industries Ltd
56 Eco Consult Ltd
57 Ecolab East Africa (K) Ltd
58 Ecotech Ltd

59 Energy Pak (K) Ltd
60 Energy Regulatory Commission
61 Equatorial Tea LTD
62 Eveready East Africa Ltd
63 Excel Chemical Ltd
64 Fairdeal UPvc, Aluminium and Glass Industries
65 Famiar Generating Systems Ltd
66 Farmers Choice Ltd
67 Flame Tree Group Holding Ltd
68 Flexoworld Ltd
69 Foam Mattress Ltd
70 Forbes Media Electronic Advertising Solutions
71 Furmat Furnishers
72 Gahir Engineering Works
73 Goldrock International Enterprises
74 Goods Chemistry Practise &Allied Cert. Corp Ltd
75 Guan Candle Making Machine Co. Ltd
76 Heluk International Ltd
77 Hills Converters (K) Ltd
78 Hydraulic Hose & Pipe Manufacturers Ltd
79 Imani Workshops
80 JET Chemicals (K) Ltd
81 Kapa Oil Refeneries Ltd
82 Kenbro Industries
83 Kenya Electricity Generating Company Ltd
84 Kenya Fluorspar Company Ltd
85 Kenya Grand Vehicle Industries
86 Kenya Orchards Ltd
87 Kenya Petroleum Refineries Ltd
88 Kenya Power and Lighting Company Ltd
89 Kenya Solar
90 Kiesta Industries Technical Services Ltd
91 Kim Fay E.A Limited
92 King Source Plastic Machinery Co. Ltd
93 Lake Turkana Wind Power Ltd
94 Magadi Soda
95 Makiga Engineering Services Ltd
96 Manzil Glass & Hardware Ltd
97 Mather & Platt Kenya Ltd
98 Maweni Limestone Ltd
99 Mellech Engineering Construction Ltd
100 Metal Crown Ltd
101 Metsec Ltd
102 MGS International (K) LTD
103 Microsoft East Africa
104 Mjengo LTD
105 Mohajan Trade International
106 Mombasa Canvas Ltd
107 Mumias Sugar Co. Ltd
108 Ndugu Transport Company Ltd
109 New Ruaraka Hardwares
110 New World Stainless Steel Ltd
111 Njoro Canning Factory
112 Octagon Express(Kenya) Ltd
113 Orbit Chemical Industries Ltd
114 Orpower 4 , Inc
115 Packaging Industries Ltd
116 Patco Industries Ltd

117 Pelican Signs Ltd
118 Petmix Feed
119 Platinum Packaging Ltd
120 Polythene Industries Ltd
121 Print Fast Kenya Ltd
122 Protec
123 Protocols Microcomputer Applications
124 Pudlo Cement Company
125 Pwani Oil Products
126 PZ Cussions EAST Africa Ltd
127 Quad Cypher sytems
128 Raghad Enterprises
129 Ramco printing works
130 Redsea chemist
131 Reesi Hospitality Ventures
132 Reliable Concrete Works Ltd
133 Renscope Scientific Kenya
134 Rhino Special Products Ltd
135 Rock Plant Kenya Ltd
136 ROM East Africa Ltd
137 Rosewood Office Systems Ltd
138 Rotam Sub-Saharan Africa
139 Rupa Cotton Mills Epz Ltd
140 Rural Elecrification Authority
141 Sameer Group
142 Sanpac Africa Ltd
143 Shade Systems(E.A) Ltd
144 Shadetents And Exquisite Designs
145 Shamas Motor Spares
146 Shankan Engterprises Ltd
147 Sigma Engineering Company Ltd
148 Simco Auto Parts Ltd
149 Slumberland Kenya Ltd
150 Solarworks East Africa
151 Stainless Steel Products Ltd
152 Stamet Products (K) Ltd
153 Statpack Industries Ltd
154 Steel Structures Ltd
155 Sudi Chemical Industries
156 Sunrays Solar Ltd
157 Superfit Steelcon Ltd
158 Tamoil Africa Holdings Ltd
159 TARPO Industries Ltd
160 Tenacity Locks Ltd
161 The Kensta Group
162 Tianjin Haopu Chemical Company
163 Top Tank
164 Tripac Chemical Industriers
165 Unga Farm Care (E.A)Ltd
166 Unga Group Ltd
167 Unighir Ltd
168 Unilever Kenya Ltd
169 Universal Ponds Kenya Ltd
170 Warren Concrete Ltd
171 Wartisila eastern Africa Ltd
172 Welfast Kenya Ltd
173 Welrods Ltd
174 Wigglesworth Exporters Ltd
175 Williamson Power Ltd
176 Wines of the World Ltd
177 Zena net Services

**APPENDIX 3: Descriptive summaries**

| | Current ratio | | Debt ratio | | Average payment period | |
|---|---|---|---|---|---|---|
| | Mean | Standard Deviation | Mean | Standard Deviation | Mean | Standard Deviation |
| B.O.C Kenya Ltd | 2.0314 | 0.0659 | 0.2763 | 0.0218 | 285.248 | 46.35 |
| British American Tobacco Kenya Ltd | 1.2883 | 0.1020 | 0.5994 | 0.1293 | 1473.83 | 156.09 |
| Carbacid Investments Ltd | 6.7994 | 2.5957 | 0.1575 | 0.1127 | 74.89 | 45.89 |
| East African Breweries Ltd | .8278 | 0.1330 | 0.6593 | 0.1600 | 887.48 | 566.61 |
| Mumias Sugar Co. Ltd | .9509 | 0.7462 | 0.4757 | 0.1488 | 116.03 | 27.60 |
| Unga Group Ltd | 2.2725 | 0.2595 | 0.3982 | 0.0480 | 42.60 | 20.91 |
| Eveready East Africa Ltd | 1.2602 | 0.2095 | 0.6481 | 0.1162 | 10040.29 | 22290.68 |
| Kenya Orchards Ltd | 1.8095 | 0.2020 | 0.7144 | 0.1625 | 160.11 | 64.68 |
| A.Baumann CO Ltd | 1.8095 | 0.2020 | 0.3304 | 0.0773 | 156.83 | 68.49 |
| Flame Tree Group Holdings Ltd | 3.4685 | 3.2190 | 0.4927 | 0.3963 | 69.56 | 35.21 |

| | Average collection period | | Inventory turnover period | | Cash conversion ratio | |
|---|---|---|---|---|---|---|
| | Mean | Standard Deviation | Mean | Standard Deviation | Mean | Standard Deviation |
| B.O.C Kenya Ltd | 99.0864 | 7.6368 | 29.1266 | 42.8412 | -157.03 | 8.9831 |
| British American Tobacco Kenya Ltd | 42.6591 | 4.9918 | 1087.83 | 174.761 | -343.34 | 257.816 |
| Carbacid Investments Ltd | 61.8484 | 32.4935 | 38.5604 | 7.755 | 25.5127 | 50.6656 |
| East African Breweries Ltd | 52.5375 | 3.3735 | 89.276 | 19.9644 | -745.67 | 586.589 |
| Mumias Sugar Co. Ltd | 93.1255 | 25.325 | 53.5606 | 11.3719 | 30.6536 | 37.6272 |
| Unga Group Ltd | 36.0115 | 7.2666 | 59.4758 | 8.9452 | 52.886 | 11.3364 |
| Eveready East Africa Ltd | 62.1608 | 14.2916 | 185.529 | 17.0911 | -9792.6 | 22302.6 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Kenya Orchards Ltd | 141.553 | 30.0458 | 92.7087 | 66.9997 | 74.147 | 15.1738 |
| A.Baumann CO Ltd | 122.529 | 66.4681 | 92.7087 | 66.9997 | 58.4111 | 53.3698 |
| Flame Tree Group Holdings Ltd | 75.7005 | 11.8176 | 38.3101 | 7.7745 | 44.4522 | 32.7301 |

| | Financial performance of manufacturing firms | |
|---|---|---|
| | Mean | Standard Deviation |
| B.O.C Kenya Ltd | .1070 | .0194 |
| British American Tobacco Kenya Ltd | .5043 | .0394 |
| Carbacid Investments Ltd | .2149 | .0347 |
| East African Breweries Ltd | .3410 | .0925 |
| Mumias Sugar Co. Ltd | -.0676 | .2306 |
| Unga Group Ltd | .1003 | .0171 |
| Eveready East Africa Ltd | -.2048 | .3782 |
| Kenya Orchards Ltd | .0194 | .3441 |
| A.Baumann CO Ltd | .2028 | .2519 |
| Flame Tree Group Holdings Ltd | 1.0307 | .7413 |