# EFFECT OF WORKING CAPITAL ON FINANCIAL PERFORMANCE OF LISTED MANUFACTURING FIRMS IN THE NAIROBI SECURITIES EXCHANGE

**BY**

**LEAH OGOLLA**

**A RESEARCH PROJECT PRESENTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF SCIENCE IN FINANCE.**

**SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI**

**2019**

## DECLARATION

I declare that this Research Project is my original work and has not been submitted for examination in any other university or institution.

Signed: …… Date: …….

**OGOLLA LEAH**

**D63/77659/2015**

The Research Project has been submitted for examination with my approval as the University Supervisor

Signed: …… Date: …….

**DR.WINNIE NYAMUTE**

**Senior Lecturer**

**Department of Finance and Accounting.**

**University of Nairobi.**

**ACKNOWLEDGEMENT**

I would to acknowledge and thank the Almighty God for the good health and favor throughout this journey without which I could not have finished this project successfully.

I am greatly indebted to my mother Alice Ogolla who has been my greatest support system during this period offering advice, prayers, financial support and guidance.

I am grateful to my family for cheering me on always; for this wasmy greatest motivation.

I would like to express my sincere gratitude to my supervisor Dr.Winnie Nyamute for providing invaluable guidance, comments and suggestions throughout the course of this project.

And to all those that have indirectly guided and helped me to achieve this course, I am thankful.

I am also obliged to the University of Nairobi for the knowledge I have gained to enable me enhance my career.

## DEDICATION

I would like to dedicate this project to: my late father Mr.D.W Ogolla whose wise words and knowledge live on in me, my mother Mrs.Ogolla for the unconditional love and support, my husband Dr.Mulongo who is always pushing to bring out the best in me, my children Mich and Amor for being my source of hope and happiness and my brothers and sisters for always believing in me. May God bless you all.

## TABLE OF CONTENTS

## LIST OF FIGURES

## LIST OF TABLES

## LIST OF ABBREVIATIONS AND ACRONYMNS

| | |
|---|---|
| **WC** | Working capital |
| **ROA** | Returns on assets |
| **ACP** | Accounts Collection Period |
| **APP** | Accounts Payable Period |
| **ARP** | Accounts Receivable Period |
| **FS** | Firm Size |
| **CS** | Capital Structure |

## ABSTRACT

The study sought to analyze the effects of working capital on financial performance of listed manufacturing companies in the Nairobi Securities Exchange. The specific research objectives were to analyze the effect of accounts collection period on financial performance of listed manufacturing companies in Nairobi Securities Exchange, to determine the impact of accounts payable period on financial performance of listed manufacturing firms in Nairobi Securities Exchange, to examine the impact of firm size on financial performance of listed manufacturing firms in Nairobi Securities Exchange and to determine the impact of capital structure on financial performance of listed manufacturing firms in Nairobi Securities Exchange. The study adopted a descriptive research design and incorporated a census study for all listed manufacturing firms at NSE Kenya that provided an insight analysis for the variables. The study target population was based on the listed firms in the Nairobi Securities Exchange. The study exclusively relied on secondary data obtained from the selected company's audited annual financial statements and presented by the Nairobi Securities Exchange's Handbook. Data analysis of the current study was done via use of descriptive and quantitative techniques. Statistical Package for Social Sciences version 23 was used and the output generated. The result indicated that there was a negative Spearman's correlation between ROA and accounts collection period r = - .332.Spearman's Correlation between account payables period and ROA was also negative with r = -0.177. An increase of firm size resulted in an increase of financial performance for the firms, similarly increase in debt to equity ratio also led to increase in financial performance for the firms. It was recommended that the government puts up supportive business infrastructure to facilitate smooth operations of manufacturing firms. The management of these firms should reconsider their working capital management techniques.

# CHAPTER ONE
# INTRODUCTION

## 1.1 Background of the Study

Aktas, Croci and Petmezas (2015), acknowledged the value of working capital in the echelons of enhancing a successful supply chain when it comes to weighing the difference involving current liabilities from current assets for comparatives to any business performance is very relevant. Thus, asset management of a firm is very beneficial when advancing firm's financial stance given that it is part of the institution's finance. Working capital management is an essential part of firm's survival and growth as it directly influences on the entire firm' financial performance. Simply, the trade of between the firm's current assets and liabilities represents the largest portfolio for company financials in an accounting year. Business make maximum utilization of their operational level by having an evaluation on the right inventory level, assessment of the receivables and payables in a pro rata approach.

Various theories have been founded to spearhead the firm's short term transactions as noted in the Trade off model, Stakeholders theory and Keynesian liquidity preference theory. Furthermore, the striking balance between the creditors and debtors is that firm will tend to hasten payment from the debtors account and delay settling their creditors account so as to have favorable balance with special consideration of not destroying their relationship with the parties in business transactions. Although, apportioning more credit without the clear predetermined payment plan may lock up finances in working capital (Kroes & Manikas, 2014). This has been exemplified by key concepts that have been widely developed and used in firm's scope of operation by not only considering the goal of the shareholders but also creating a lasting impression to the key stakeholders.

Certain policies are followed when handling cash, creditors, debtors, inventories, accruals and prepayments in a way that follows a guide and is being practiced by many firms across the specific sector like manufacturing firms. Different businesses present their mode of conducting business transaction and can only be compared along the board and not in a mix of firms due to nature of the products, services and assets in use.

Globally, most of the manufacturing firms are engaged in setting and strategizing on the long term financial decisions of the organization with very little attention to the current tradable business activities that forms the basis for the firm to achieve their goals (Salman, Folajin &Oriowo, 2014). Short term tradable assets and liabilities are the engine of the firm and crucial component of corporate finance with relevant emphasis in ensuring firms have continuous cash flows in operations to meet short term liabilities as they fall due. The key components that are the variables of the study being; the accounts collection period, the accounts payable period and the accounts receivable period. Working capital management is very significant to the firm's financial performance as it correlates to the profitability, risks and value whereby firms with good working capital management yields sustained growth and attracts prospective investors (Salawu & Alao, 2014). Working capital is operated in a manner that entails maintaining the maximum level of each current assets and current liabilities divisions that is being; inventory, payables, receivables and the cash for competitive advantage of the business (Bhalla, 2014).The funnel approach to the planning and implementation of policies meant to strengthen firms WC is very relevant in the executives when analyzing main drivers organizations portfolios in the balance sheet extract and approaches on minimizing risks and uncertainties to effectively enhance overall performance of the firms (Abor, 2017). Multinational

institutions in the manufacturing sector have built a strong capital and invested heavily in the systems that bring coverage to the possible financial risk when in line of business.

### 1.1.1 Working Capital

Working capital represents the firm's largest resources that are planned to ensure the short term assets and obligations are controlled in component to finance changes from cash, inventory, payables and receivables and back to cash in a cycle. Prioritizing the essence for organizing and managing firm's current resources has a greater influence to the firm's returns. Throughout, policies have been adopted to bring balance in the trade cycle for assets and liabilities within the accounting period (Jamalinesari &Soheili, 2015). In the analysis of financial statements and in accounting process, working capital (WC) is best represented in the source documentation of the assets and liabilities that falls due within the three hundred and sixty-five days (Samiloglu, 2016). Effective WC involves application of the means which eliminate the risks and the inability to pay its current commitments on one side and also avoid investments in assets that are more than recommended on the other side through controlling and planning of the short-term assets and liabilities (Karadag, 2015).

WC is significance to the firms as it connotes the survival of firms at all growth levels to yield profitability and liquidity. Effective management of the WC incorporates a desired tradeoff in risk and return model. High liquidity level moderates risk while some riskier investments yield high return (Bhalla, 2014).Establishing optimal guide on how firm's current capital widely involves the effective administration of the liabilities and assets that fall due within one financial year. Thus, having right management focus to the firm financial performance and the liquidity is relevant to

the going concern (Kodongo, 2016). The short term liquidity crisis highlights the need to efficiently administer WC of a company has in financial implications and also recommends a common front for the return in asset of a company. Maximization of the WC of a company in current resources requires the manager to have total power to assess the trade- off between the maximization of the profits and liquidity (Afrifa, Tauringana &Tingbani, 2014).

WC components consist of the balance sheet items that fall within the financial year and are assessed in relation to the three hundred and sixty-five days. The measurement of the payment period that is estimated on the basis of payables over cost of sales, receivables are tallied against cost of sales while payables are averaged at the start and end of year. Thus, maximization of the working capital positively contributes to the creation of the value of the company. Excess short-term assets can result in the substandard investments returns in cases where companies that have few short term assets leading to constrained operation in daily program as described by (Charitu &Elfani, 2016).

### 1.1.2 Financial Performance

Firm's financial performance represents the status of a shareholder wealth in a business process assessed at the start and end of a period. Various transactions are involved in the process of recognition, measurement and valuation at market prices. Firm will utilize the resources it has to generate revenue and must be conducted in organized manner to realize returns at the end of a specified period. The concept is used to refer to the general financial health of a firm over a period of time and in comparison to other firms within the same sector (Pandey, 2015).

The subjective goal of every firm is to gain substantial values in the due course of their business transactions by having more returns and less expense. Positive firm performance reflected by high profit margin, goodwill and efficient system are pillars of growth to any organization. Various assessments relating to returns, revenue efficiency, asset management, liquidity and capital efficiency have been widely related to financial performance measures. More so, the analysis is deeply embedded to the successful of financial management and planning in an organization. In other relative terms, bulging sales revenue, shrinking in expenditures and growth of the assets registers are best financial practices (Pandey, 2015). The performance of an organization in terms of the financial flows spree is determined in comparison within the same category of firms in the same sector such as the manufacturing firms. The managers in the listed manufacturing firms will have to rate their performance based on the general growth of the organizations by having or setting modern infrastructure, increase in provision of their services to the economy, recognition within the local communities and the profitability to meet and sustain work force in the system.

The measure of firms' financial performance is categorized into five groups to involve an abbreviation of CAMEL that stands for; capital adequacy, asset quality, management competency, earnings and liquidity (Farina & Mauri, 2014). In addition, assessing and determining firms' financial performance can be attained via the use of balanced scorecard that gauges the internal business process. Financial performance of firms is also assessed by analyzing the level of use of assets to generate income, the firms combined assets are assessed against the income with a percentage substituted as Return on Assets (ROA).

### 1.1.3 Working Capital and Financial Performance

Working capital is clearly traded in business firm to ensure there is operational efficiency and the available cash flow is sufficient to meet the short term assets and short term liabilities in an obligation. Manufacturing firms must ensure their availability of the cash flows to remove on the hiccups that may derail normal business operations to enhance operational and financial performance of such listed firms and record a positive working capital (Samiloglu, 2016). This revolves around the resources that generate income or obligations due and fall within 365 days. They are the going concern of business entity and thus the liquidity of the firm firmly relies not only to the price for liquidation of stocks but also cash gained from the resources held by the firm (Ng, 2017).

Studies that have been previously undertaken on the relationship between working capital and financial performance include a study by Mathuva (2015) who undertook a study on the influence of working capital on profitability of firms listed at NSE. Yegon et al. (2014) sought to understand working capital management and corporate financial performance for selected tea companies quoted at NSE. Internationally, Nobanee and Al Hajjar (2014) presented an optimal WC for the CCC and firm profitability in United Kingdom. Mun and Jang (2015) undertook a similar study in Indonesia. The findings of these studies indicated different findings that indicated the changes experienced by the variables in different companies, and different policies implemented by different management.

Banos (2016), studied management of WC being an important aspect to the financial performance in enabling a strike of balance in the transformation of short term assets into progressive long term investment. This represents a direct correlation between

WCM and business return on assets (ROA) when evaluating the efficiency and profitability in operations (Deloof, 2013). In addition, holding working capital in excess ties up the available funds that results to an imbalance in the working capital components. Thus most studies claim an inverse relationship between the two at both micro and macro levels.

### 1.1.4 Listed Manufacturing Firms

Nairobi Securities Exchange (NSE), formally Nairobi Stock Exchange came into existence in 1954 with main aim of providing a platform for trade of the listed companies under the guidelines of Capital Market Authority. Apparently, the NSE platform has 65listed firms with market capitalization of Kenya Shilling 2,171.96 billion with average of KES of 20 million traded every day. They range from the manufacturing firms, commercial and services, banking, insurance, agricultural, investments, energy and petroleum, construction technology and telecommunications.

Currently, NSE has nine listed manufacturing firms (Flame Tree Group Holdings Limited, Kenya Orchads, Eveready East Africa, Unga Group Ltd,Mumias Sugar, East Africa Breweries (EABL), Carbacid Investment, British America Tobacco Kenya Limited and BOC Kenya. Some of the listed firms are struggling to stay afloat and others on the verge of collapsing due to financial management crisis. Such dire challenges can only be addressed relevance to WC policies to better performance of the listed organizations.

The WC for manufacturing firms listed in the NSE has been on an upward trend. Efficient WC policies are becoming relevant in manufacturing sector that are coupled with very delicate financial system and uncertainty in economic environment. Evidently, correct practices of having more aggressive working capital management

aimed at increasing shareholders returns in the manufacturing sector that brings proportionality to the finances (Singhania, 2014). Manufacturing firms should maintain a sufficiently optimal level of inventory to reduce the associated expenditures to avoid interruptions in flow of business operations.

### 1.2 Research Problem

The efficiency of the working capital management has a vital effect on the firms' financial performance in short term and long term liquidity that is pegged on the entity going concern (Charitou&Elfani, 2016). The collapse of Mumias Sugar Company and turbulent times to some of the manufacturing firms has been linked to the inability of the top management to fully plan, balance and control the firm's current assets and liabilities that brings about positive returns to the shareholders and value to suppliers. Evidently, low investments in the working capital can raise the risk of failing to pay creditors, reduces cash tied to the short term assets and therefore increases profits. When there is too much working capital, the risk levels and the returns reduce while when there is low working capital, the levels of risks and returns increases. Abbas and Yushan (2016) describes that WC has important impact on company performance. Many business failures are linked to the inability of the managers to control and plan their resources and obligations due. Financial managers thus have to maintain a maximum WC component to yield desired returns and maximizes the wealth of the shareholders.

Locally, Mwangi Kosimei and Makau (2014) presented a paper titled to review non-financial institutions listed by establishing the influence of WC on performance. The findings showed aggressive financial policy had a concave association to firm performance thereby recommending managers to adopt aggressive policy. Musau

(2015) presented a report for association between working capital management and firms' return of energy firms listed. The study sampled 36 respondents and assessed on inventory management, time taken to convert stock into cash, debtors and creditors. The findings showed that sampled firms have an average of 48.63 days to convert inventories to cash of which it recommended that managers reduce number of days by converting assets into cash and taking some considerable delay when it comes to sorting creditors and using prepaid cards to enhance billing efficiency.

The study findings presented in the above concentrated on a few variables that cannot be generalized in the study and most of the Kenyan firms do not maintain an optimal working capital level that has created issues in the firm's management. In addition, little has been done in determining the effect of WC on ROA of listed manufacturing firms. Thus, this research intends to bridge the gap by reviewing how; accounts collection period, accounts payable period and accounts receivable period associate to financial performance.

Many researchers have presented their strong evidences to support the essence of WC and returns in different sectors of economy at global, regional and local context. Botac and Anton (2017) studied firm's financial performance by considering on the profitability establishment of 141 emerging high growth European firms. The analysis showed that working capital components that is; accounts receivable periods, accounts payable period and inventory holding period had direct association to firm performance hence important in policy making on payment periods. Afrifa, Tauringana and Tingbani (2014) investigated the impact of WC on performance of listed SMEs in Sweden. The output indicated that time it takes to convert inventory in to cash significantly affects return on investments for profitability thus managers must

improve working capital policy on reducing the inventory conversion to money. Abbas andY ushan (2014) expounded on effective WC and firm performance of Tanzania Insurance firms and established an inverted U shape association between WC and financial score. They advised that companies to enhance financial performance by maintaining short period for debt collection while increasing time to pay creditors.

The different findings indicated by the different studies that undertook similar studies, indicates that WC highly depend on strategies and policies adopted by management. Organizations keep changing their policies and strategies, depending on diversity and market dynamics. This therefore creates a research gap where different strategies adopted by companies have different impact on WC and financial performance.There also exists contextual research gaps depending on the context of studies. Methodological gaps in related studies include data collection techniques and analysis that focused on only the manufacturing firms listed at the NSE for a period of five years. The research gaps identified were addressed by the answer to the research question: What is the effect of Working Capital on financial performance of listed manufacturing firms at NSE?

### 1.3 Research Objective

The research objective was to determine the effect of working capital on financial performance of listed manufacturing firms in Nairobi Securities Exchange.

### 1.4 Value of the Study

The study incorporated liquidity preference theory to expound on the investors link to type of investments that are liquid like buying shares among listed firms. The study contributes to stakeholders' knowledge and point of view when having interest to

specific businesses. Importantly, the Trade off theory is relevance when optimizing returns with favorable liquidity level. The study therefore contributed to the development of the theories as it weighed in on WC and effect on financial performance. It also added vital literature review necessary for future researchers in developing their research gaps.

The study is of value to the policy makers such as Nairobi Securities Exchange, Capital Market Authority, Kenya Revenue Authority and Kenya Association of Manufacturers who are tasked with coming up with legislations meant for betterment of decisions meant to promote growth firms and have more returns. The management of various manufacturing firms would find the study important as it provides WC strategies adopted by different firms and provide insight on the impact of such strategy on financial performance.

The value of study is directed to scholars and professionals in finance, accounting and management to understand how the study determinant and response variables relates and suggest key areas of research for further analysis. The government institutions can use the study findings, policy and recommendations to make decisions when it comes to regulating and making laws that governs firms. The study is of important to the companies listed in Nairobi Securities Exchange.

# CHAPTER TWO
# LITERATURE REVIEW

## 2.1 Introduction

Chapter two presents an extensive review of literature obtained from previous studies relating to the present study objectives. The chapter goes ahead to incorporate theories and a summary of reflective objectives in empirical review.

## 2.2 Theoretical Review

Concepts and beliefs that are widely used and have been presented about phenomenon to affirm what is being presented in a modeled association and relevant to the study. Thus, theoretical background is presented by capturing Liquidity Preference Theory by Keynes, Stakeholders Theory and Trade off Theory.

### 2.2.1 Liquidity Preference Theory

Liquidity Preference Theory was originally developed by an economist John Keynes in the year 1936 and it laid foundation of working capital management. According to Keynes keeping all the other factors constant, the investors prefer investments that are liquid in contrast to the investments that are not liquid which usually seek a maximum return for investments of long-term maturity.

Liquidity is the situation of holding on to cash, businesses hold on to finances or their stock to meet their regular transactions motives, precautionary motives, speculative and the compensation motives as presented by (Lavoie &Reissl, 2018). The transactional motive involves the business firm holding on to money for the main reason of catering for the present transactions for the business exchanges. Firms hold on to finances to enable them to cater for their present needs like the wages and

salaries transportation fee and costs of buying raw materials. The precautionary motives are a situation where the firms are required to keep finances as financial security for the unexpected emergencies, any given business firm will allocate cash to deal with hardships or to gain from unforeseen occurrences. Speculative motives are situation whereby the business firms keep an asset in form of liquidity to gain from the minor changes in the interest rates or bonds.

Keynesian liquidity theory significant to the present study as it presents on to the need of liquidity to facilitate regular activities of the business that cannot be ignored. Friedman (2017) noted presence of negative correlation of the firm's liquidity and financial performances in an environment where there are weak business transaction policies.

### 2.2.2 Stakeholders Theory

The theory was formulated in the discipline of management in the year 1970 and was advanced by Freeman (1984) who described a stakeholder as any individual that is interested in a business firms and can have an influence on the business objectives and activities (Schenkel, Krikke & Caniels, 2015). The stakeholders in the firms mainly exist in the form of; customers, creditors, debtors, government, investors, community and general public at large.

A discussion presented by Schenkel, Krikke and Caniels (2015) on the role of stakeholders to the business objective that must co-exist given that businesses will aim at generating and increasing the value of the shareholders. Though the motive of appealing to the shareholders only should not come at the expense of compromising the interest of other stakeholders in the business environment. Research study

conducted by Simon and March (1998) the stakeholders supply the business firms with the important resources and in return they should expect their interest to be fulfilled. The consumers provide the revenue source to the business firms and in exchange they should expect to get value for the finances through the quality of the products. The creditors and the suppliers provide inputs to the business firms and thus expect prices that are fair and have payment returns (Mwangi, Makau & Kosimbei, 2014).

Stakeholders keep track of the performances of the finances, the liquidity and the management of the working capital. Enhanced performances of the employees in finances and the business management gets remunerations and returns. Thus, efficient working capital management decisions satisfy the stakeholders' interests. The significance of the stakeholder theory is analyzed from the position of the business firms' executives who decide and design the systems used in managing working capital in order to satisfy the stakeholders needs (Nielsen & Schaper, 2018).

### 2.2.3 Trade Off Theory

The Trade-off theory was first founded by Modiglian and Miller in the year 1963. The theory is about the most important objective of a firm is to optimize the profits and ensure it maintains a favorable liquidity. Decision to increase profit by writing down liquidity can lead to detrimental effects to the business.

The tradeoff model shows how a firm determines its maximum level of keeping cash founded on the comparison to the marginal cost and the benefits of holding cash (Nicodano & Ragis, 2018). Heavy investment in the current assets will lead to low

return on assets of a firm since over investment in the current assets does not bring enough returns. The firms should decide on the level of the current assets to help maintain other operational factors in sustainable environment. According to Nicodano *et al*., (2018) the firm can opt to adopt a conservative risk return trade off which involves minimal risks and low returns or select aggressive policies for high risk and higher returns. According to Pandey (2010), the rank correlation of a firm's profitability has an inverse relationship to the rank correlation of liquidity. Thus, liquidity rise in liquidity results into decrease in profitability.

The tradeoff model is thus relevant in the current study to elaborate WC on returns of listed firms in Nairobi Securities Exchange. Managing the trade-off between the firm's profitability and liquidity is very critical component for management decisions in a firm.

### 2.3 Determinants of Financial Performance

#### 2.3.1 Accounts Collection Period

Payments of the account receivables are a key ingredient to the firm's liquidity, the flow of cash that is very essential to the operation of the business. Payments made at the exact time ensure that every part of the business is moving and the firm is able to cater for its current and future obligations. The collection policies must be very strict and the processes to be followed to give customers the motivation to pay conveniently (Filbeck & Krueger, 2015). Makori and Jagongo (2013) argues that the goal of designing collection policies is permitting consumers to make on time payments and make collection of accounts due from the past business transaction within a time line of 30 to 90 days in the business usually sets before accounts due from the previous

year's cannot be collected, taking them to the institutions of collection and writing them off.

### 2.3.2 Accounts Receivable Period

Account receivable period is represented by the firms' obligation to reach out to the clients whom they have supplied goods and services on credit based on the agreement. It is mostly advisable for the businesses institution to have clear policies that would guide on their terms with the receivables so as not to constrain the operations. Letting in the receivables comes with its challenge on debt collection and bad debts to. It is advised that the firms to strictly adhere to cash payment when need so as a priority, the terms of the receivables should have shortest credit period extension and longest settlement of the payables. When minimizing the receivable collection period, a business might lose its good credit worthy customers and when extending the deferred period for paying a business could affect its good credit reputation (Muturi, 2013).

The provision of the new customers of credit with the sales condition and information of payment that usually includes information on the receipts of credit and the statements can be used to remind the customers their credit responsibilities (Sajjad & Bukhari, 2017). The internal collections steps include a procedure for connecting with customers due to previous transactions. A business company can send a previous notice that is due and begin making the regular calls for collection when a payment is late after a week. If the payments made are not received, the business phone calls are made on a regularly. If the business customers are more than the due date of 30 to the more than 89 days, the firm can use the collection institution or take a law suit to court.

### 2.3.3 Accounts Payable Period

The accounts payable in a firm's financial statements are what the firm owes the suppliers who provide inventory, services or general work as agreed. Accounts that are payable are a short term liability, and they are normally repaid within the 12 months of a business financial year. A business that pays its expenses on time usually gets consideration of the conditions of sale for the business that also includes a cash discount if the business firm pays within a specified period of time. In the cases where the business has sufficient cash flow to pay the invoices in the discount period and uses the period of discount and may have a great impact on returns.

Ukaegbu (2014) presented the significance of working capital management in determining firm returns. The study adopted a quantitative approach using panel data of manufacturing firms in Kenya, Egypt, Nigeria and South Africa for the period 2005 – 2009. The study showed a negative relationship between profitability, cash conversion cycles across the various industrialization topologies. The study recommended that managers can create a positive value of shareholders by reducing the day's customer settle accounts, selling inventories quicker and delaying payments to their suppliers as long as it does not affect their credit rating.

## 2.4 Empirical Review

Empirical review represents past studies that have been presented by other researchers in global and local arena specifically expounding on the context and relevance of the present study in comparison to other studies that have been published.

### 2.4.1 Global Studies

Internationally, studies have been presenting on the basis of establishing the nature of the association between the working capital management components and financial performance of various firms in diverse sector form. In a study conducted by Martinez and Sola (2014) on WC for trade credit and SMEs profitability involving 11,337 manufacturing firms in Spain from 200 to 2007. The study used panel data and a descriptive research design. The study findings indicated that managers can improve firm profitability by increasing investment in receivables to impact on the performance of unconstrained firms, volatile firms and firms with bigger market shares. Thus, the standards of accounting views the account receivables as an asset to a business firm and usually encourages that they be written in the part of assets in a financial statement. The write- offs reduces the functioning of a business assets and raises bad debts which are considered as bad debts thus written in the business section of liabilities.

Mun and Jang (2015) presented the hospitality sector in Indonesia by establishing the role of WC on the profitability of the restaurants. The journal utilized secondary data obtained from a list of 200 star hotels in five years' time. This was a reflection of the increasing number of visitors over the last decade. The study findings showed the presence of a strong inverted U shaped relationship between the payment monitoring and firm return growth. The presented journal recommended on strong emphasis in the management of the payables and receivables with clear collection policies that will leave the business with the positive results.

Referring to Nobanee an Al Hajjar (2014) presented an optimal WC for the cash conversion cycle and firm profitability in United Kingdom. The study used panel data

and involved 300 small and medium scale enterprises. The analysis showed that shortening cash conversion cycle increases the firm profitability, though the weakness is that the firm might lose reliable good credit customers who may mean a lot to the business. Thus when the entity is fully liquid with lots of resources, it can pursue other worthy cycle such as giving out on credit services with strict review to the policies on the engagements to increase growth. The study advised that firms should maintain an optimal cash conversion cycle as a more accurate and comprehensive measure of working capital management.

Study presented by Mishra and Guray (2017) from Mumbai India, stated that maintaining a good WC as an investment in receivables in form of credit has a direct implication to firms value and successful management of resources for higher profitability using twenty one randomly selected firms. The findings resulted in a strong positive correlation to corporate value, though the value may not be key emphasis of the shareholders as opposed to the agent decision to incorporate. Therefore, the flexibility in managing customers and having a credit extension policy is very imminent in creating value to the firm at both levels.

Review of the firm's credit management model in the WC is widely influenced when collecting and controlling of the payments from the customers is strictly adhered to (Pandey, 2010). This involved assessing financial management of 112 firms in India and establishing how the determinant factor on payables impact firm finances. Thus, relating to accounts payable, strategies are adopted among the firms in ensuring they maintain an effective level of credit and the management of the payables through, credit classifications, credit ratings, daily credit analysis and reporting.

In a study conducted by Temtime (2016) on the relationship between working capital management, policies and profitability of 176 publicly traded small manufacturing firms in US. The study employed a retrospective secondary data analysis. This was aimed at establishing how collection polices impacts on profitability of the association was positive. The study was necessitated by the need to have a successful and efficient utilization of the working capital.

### 2.4.2 Local Studies

Studies presented at the local level have broadly discussed the influence of WC on the performance of many companies from different industries. Mathuva (2015), did a study analysis of how WC does influence corporate profitability of firms in Nairobi Securities Exchange that elaborated on the conversion cycle and the collection period being the time inventory matures and the debtors are attained. The model was expressed as inventory conversion and the receivables over sales multiplied by three hundred and sixty-five days. The findings showed that lowering the conversion cycle and effective collection policies had a direct increase to the growth of reported returns. The listed firms have to meet specific requirements to be there and their main goal from the stakeholders involve realization of the value and maximization of the returns through effective management who clearly outweighs the risk and return decisions for the firms.

Yegon, Kiprono and Willy (2014) studied working capital management and corporate financial performance from selected quoted tea companies in Kenya. This was motivated by the need to assess the status of agricultural products given that tea is the leading exporter and how it imparts on the firm operations at the local level when involving a set of legal entities. The study result indicated that tea firms are facing

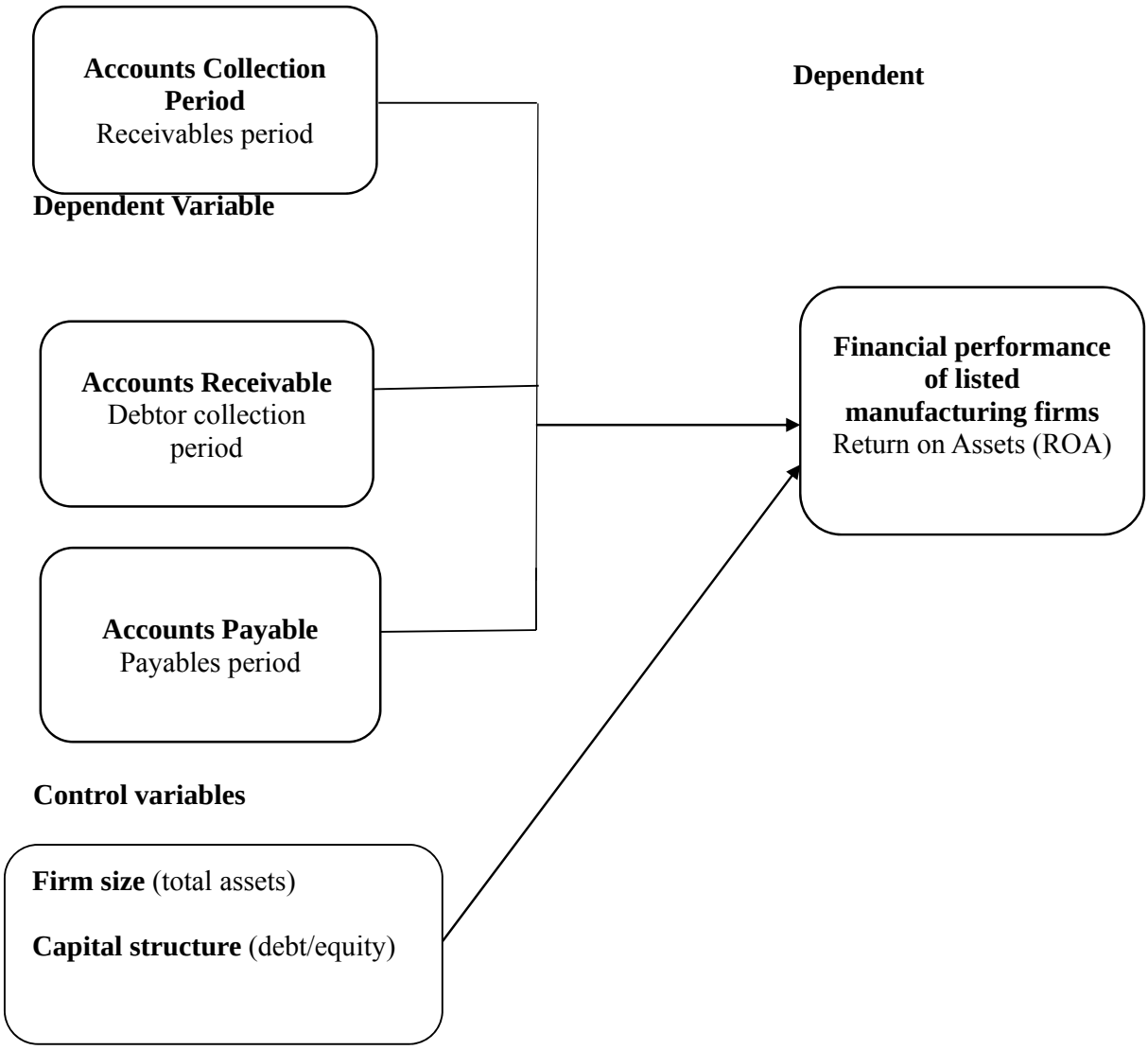
challenges in with collection and payment policies affecting on their performance. The study recommended that for efficient working capital management policies by involving specialized institutions to advice on working capital management of tea firms giving a gap to the role of internal management and firm success.

Karuri and Nikkinen (2010) depicted the influence of the WC to organization learning, termination and payout policy in dynamic incentive contracts. The study involved 20 firms with emphasis on capturing business transition and the payment plan. The study findings indicated that cash constrained firms usually delays on the payment as a strategy to be on float. Though, not all the companies that delay payment are cash constrained but may have other issues and bureaucracy in the management.

## 2.5 Conceptual Model

This is an association that exists in a diagrammatic model. It helps to create new ideas and make a presented work look like a scholarly and reputable work.

**Independent Variables**




Source: Author (2019).

**Figure 2.1Conceptual Model**

## 2.6 Summary of the Literature Review

From the analysis of the presented literature, it is clear evidenced there exist a direct association on the concept variables and its relevance to the business environment. This is backed by a study presented by Mwangi, Makau and Kosimbei (2014), acknowledging the role of creditors input to the business firms and the need for stakeholder roles in any business performance. Having WC policies in the economy is among the milestones that firm may reward the public. It is clearly spelt that proper balance of current assets and liabilities yields direct association to sound financial performance attached to receivables, payables and collection period. Assets and liabilities recorded within the financial year are relevant in linking the study gap by showing the hypothetical association to the current study.

# CHAPTER THREE
# RESEARCH METHODOLOGY

## 3.1 Introduction

Part three of the project presented a detailed breakdown in sub topical for study techniques applied in fieldwork when highlighting the topic at hand. The concept expounded to include a detailed plan to guide the researcher, overall population to be involved, the sample frame, sampling approach, gathering data and computing study variables to entail demographic information, descriptive statistics and inferential statistics.

## 3.2 Research Design

Williman (2017) stated that research design is a planned structure of inquiries that responds to the research questions and assist the researcher to clarify data in a meaningful way. Research design creates a conceptual blue print guide for data collection and analysis. The study assimilated discretional foundation for the study structure using census to provide an insight analysis and to help generalize the situation of the population status (Mugenda, 2012).

Descriptive research design explains on the study objectives based on natural phenomenon of the variables in their status quo. It provides information on measurable characters of a population making it suitable and preferable for this study.

## 3.3 Population

Population entails people, organizations, events, items, households or groups with unique identifiable features under investigation and in total consideration (Williman, 2017). The study will adopt a census by considering all the nine manufacturing firms being; Flame Tree Group Holdings Limited, Kenya Orchads Limited, Mumias Sugar,

Unga Group Limited, Eveready East Africa, East Africa Breweries (EABL), Carbacid Investment, British America Tobacco Kenya Limited and B.O.C Kenya Limited.

### 3.4 Data Collection

Methods of data collection exclusively was obtained from secondary sources of information that being the final and approved audited financial results of the listed manufacturing firms and presented by the Nairobi Securities Exchange. The data collection sheets was derived to collects the information from income statement, accounts receivable, accounts payable, sales revenue, gross income, net income, capital structure and total assets. Validity of the study was achieved through relying on the audited financial statements that minimizes on the chances of misrepresentation of the information. The research was based on panel data from the nine firms in a period of five years; 2014-2018.

### 3.5 Data Analysis

Data analysis of the current study was done via use of descriptive and quantitative techniques. Statistical Package for Social Sciences version 23 was applicable in data analysis of the current study. Data analysis of the output was categorized into descriptive analysis to measure minimum values, maximum values, mean standard deviation and variance. Inferential statistical analysis covered on the coefficient of correlation to examine on the variable level of association, coefficient of determination for model of fitness and linear regression.

#### 3.5.1 Diagnostic Tests

There are basic assumptions made by multiple regression model, in which various diagnostic tests are undertaken to ensure that the data is complaint with model requirements. The diagnostic tests undertaken are normality tests, multicollinearity

Test, linearity Tests and Heteroscedasticity test. The Shapiro-Wilk tests for Normality,Variance inflation factor(VIF) tests for multicollinearity andHeteroscedasticity is tested using the Breusch-Pagan test.

### 3.5.2 Analytical model

The multilinear regression model was incorporated to explain about the study causal association for determinant variables and response variable. Then the selected variables were presented in the model shown below:

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

Y= ROA= Financial performance measure

$\beta$ = Constant term, $\beta_1$, $\beta_2$, $\beta_3$,$\beta_4$ and $\beta_5$ = coefficient of $X_1$,$X_2$,$X_3$,and $X_4$respectively.

$X_1$= accounts collection period = 365/AR turnover

$X_2$ = accounts payable period = total payables/credit purchases*365

$X_3$=Firm size= ln(total assets).

$X_4$=Capital structure = debt/equity

e= error term

### 3.5.3 Test of Significance

The study utilized Analysis of Variance (ANOVA) F tests to assess the significance of the model in the p value estimation whereby a model that has $p < 0.05$ is statistically significant.

# CHAPTER FOUR
# PRESENTATIONS OF RESEARCH FINDINGS AND DISCUSSIONS

## 4.1 Introduction

The chapter describes the variables of the study in the form of mean and standard deviation and the outliers for the maximum and minimum values of the variables. The chapter also shows the diagnostic tests, the correlation and a regression analysis to show the significance and reliability of the model. The chapter then explains the study findings.

## 4.2 Descriptive Statistics

Descriptive statistics indicates on the minimum values, maximum values, mean, and standard deviation of the study variables. The use of descriptive statistics enabled the researcher to understand better on the trends of the variables of the study of listed manufacturing firms for the study period.

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| | Statistic | Statistic | Statistic | Statistic | Statistic |
| Y = ROA | 45 | -96.22 | 41.19 | 6.49 | 23.02 |
| X1 = AR Collection Period | 45 | .77 | 29.29 | 7.87 | 6.88 |
| X2 = Acs Payable period | 45 | 6.80 | 1243.77 | 208.77 | 213.53 |
| X3 = Size | 45 | 11.16 | 18.08 | 15.04 | 1.88 |
| X4= Capital Structure | 45 | .014 | 30.84 | 3.12 | 6.14 |
| Valid N (listwise) | 45 | | | | |

**Table 4.1Descriptive statistics for the average of the variables**

Source: Author, (2019).

The above table 4.2 shows the descriptive statistics of the presented variables. The dependent variable that was determined by ROA showed that the mean of financial performance for listed manufacturing firms in the period was 6.49% with a high standard deviation of 23.02%. In the study period the firm that reported the highest ROA had 41.2% with the poorest firm reporting a loss of 96.22%. This therefore indicates the performance for these firms in the study period varied significantly from one firm to the other.

The independent variable for working capital management was accounts receivable collection period and accounts payable collection period. The accounts receivable collection period had a mean of 7.9 (approx. 8 days) with a standard deviation of 7 days. The company that took the longest period to collect receivable took 29.3 days while the company that took the shortest period took 0.8 days (approx. 1 day).This shows that manufacturing companies listed at NSE prefer to undertake sales on cash basis rather than on credit basis.

Accounts payable period had a mean of 208.8 days with standard deviation of 213 days which shows great deviation from the mean. This indicates that manufacturing firms listed at NSE have different policies in regard to accounts payables period. The firms take unnecessarily too long before they pay their suppliers that may have adverse effect on their relationship with the suppliers. The input costs may also be higher as most of these firms indicate that they do not enjoy cash discounts.

The size of the firms was measured by the natural log of total assets. The mean was 15.04 with a small standard deviation of 1.88. The largest company in form of assets had a natural logarithm of 18.1 while the least had a natural logarithm of 11.16.The

mean for capital structure that was represented by debt over equity was 3.12 with a standard deviation of 6.14. The maximum was 30.84 and the minimum was 0.014.

### 4.3 Diagnostic Tests

There are basic assumptions made by multiple regression model, in which various diagnostic tests are undertaken to ensure that the data is complaint with model requirements. The diagnostic tests undertaken are normality tests, multicollinearity Test, linearity Tests and.Heteroscedasticity test

#### 4.3.1 Normality Test

Normality test is used to determine whether data is obtained from a population with normal distribution or not. Normality test is undertaken by use of Shapiro-Wilk Test, where the significance level below 0.05 indicates that we accept the null hypothesis that data is not from a normal distribution. A significance level of above 0.05 shows that we reject the null hypothesis and state that data of a variable is from a population with normal distribution.

**Table 4.2: Tests of Normality Table**

| | Kolmogorov-Smirnov[a] | | Shapiro-Wilk | | |
|---|---|---|---|---|---|
| | Statistic | df | Sig. | | |
| Y = ROA | .197 | 45 | .000 | .831 | 45 | .000 |
| X1 = AR Collection Period | .210 | 45 | .000 | .794 | 45 | .000 |
| X2 = Acs Payable period | .216 | 45 | .000 | .689 | 45 | .000 |
| X3 = Size | .114 | 45 | .178 | .946 | 45 | .036 |
| X4= Capital Structure | .300 | 45 | .000 | .500 | 45 | .000 |

a. Lilliefors Significance Correction

The table shows that all the variables have a significance of below 0.05 for Shapiro-Wilk Test measure, therefore we conclude that the data is not from population with normal distribution. In order to deal with this challenge the study used non parametric

tests in order to undertake correlation and regression that do not require assumption of normality.

### 4.3.2 Multicollinearity Test

Multicollinearity tests the relationship between independent variables. Independent variables are assumed that they are not related to each other, since if they are related, it would compromise their effect on the dependent variable. In order to identify whether there exists multi-collinearity in data, we use Variance Inflation Factors (VIF) where a variable with a VIF factor of 5 and above indicates that there is presence of multicollinearity that might be a problem on the relation with the dependent variable.

**Table 4.3: Multi-Collinearity Test Table**

| Model | 95.0% Confidence Interval for B | | Collinearity Statistics | |
|---|---|---|---|---|
| | Lower Bound | Upper Bound | Tolerance | VIF |
| (Constant) | -42.853 | 75.952 | | |
| X1 AR Collection Period | -1.258 | .754 | .594 | 1.684 |
| X2 Acs Payable period | -.102 | -.048 | .874 | 1.144 |
| X3 Size | -3.237 | 4.174 | .588 | 1.700 |
| X4 Capital Structure | -.739 | 1.088 | .891 | 1.122 |

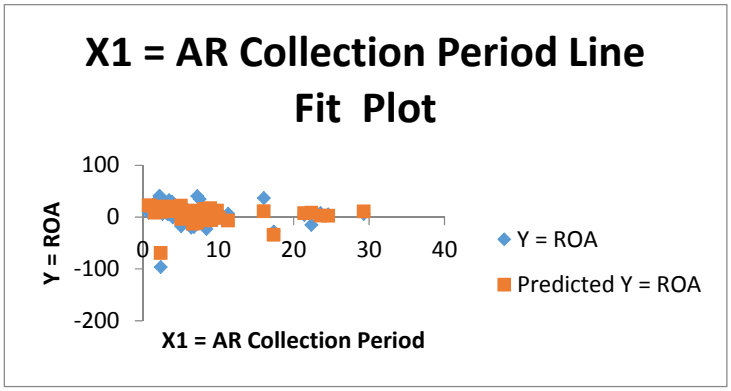
Source: Author, (2019)

The VIF factors for all the independent variables are below 5 that show very little collinearity between the independent variables. The variables are therefore good to be used in analysis.

### 4.3.3 Linearity Test

Linearity test is used to determine whether the variables can be represented in a linear format. This is tested by use of normal data plots where after plotting the variables, we identify whether they show any form of linear tendency.

**Figure 4.1: Line Fit Plot Graph**




Source: Author, (2019)

The line fit graph 4.2 shows the sample variables line plot graph that indicates linear tendency between the independent variable and the dependent variable. The variables therefore shows linear tendencies.

### 4.3.4 Homoscedasticity Test

Homoscedasticity test is undertaken to ensure that the variance of data points from the regression line are equal or almost equal to zero, and therefore indicates that the regression line is the line of best fit for the data, with no major outliers that would have adverse effect on the predictability of the model.

Breusch-Pagan and Koenker test statistics and sig-values

| | LM | Sig |
|---|---|---|
| BP | 3.792 | .435 |
| Koenker | 6.987 | .137 |

Null hypothesis: heteroskedasticity not present (homoskedasticity).

If sig-value less than 0.05, reject the null hypothesis.

Note: Breusch-Pagan test is a large sample test and assumes the residuals to be normally distributed.

Source: Author (2019).

Koenker test is preferred to determine whether independent variables are heteroscedastic or not, the significance for Koenker test is above 0.05 and therefore

we fail to reject the null hypothesis and state that there is no heteroscedasticity in the data.

### 4.4 Correlation Analysis

Correlation analysis indicates the correlation between the independent variable and the dependent variable. The study used non parametric tests since the data is not from a normal distribution. Spearman Correlation is therefore used in place of Pearson Correlation. The correlation can either be positive or negative, it also ranges from 0 to 1. A value of 0-0.2 indicates a weak correlation, 0.21-0.4 moderate correlation, 0.41-0.6 strong correlation 0.61-1 very strong correlation.

**Table 4.4: Spearman's Correlations Table**

| | | | X1 = AR Collection Period | X2 = A/Cs Payable period | X3 = Size | X4= Capital Structure | Y = ROA |
|---|---|---|---|---|---|---|---|
| Spearman's rho | X1 = AR Collection Period | | 1.000 | | | | |
| | X2 = Acs Payable period | | .232 | 1.000 | | | |
| | X3 = Size | | -.586** | .347* | 1.000 | | |
| | X4= Capital Structure | | .150 | .035 | .125 | 1.000 | |
| | Y = ROA | | -.332* | -.177 | .051 | -.118 | 1.000 |
| | | N | 45 | 45 | 45 | 45 | 45 |

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

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Author, (2019)

The correlation between Y (dependent variable) and accounts receivable collection period is -0.332 which is significant. This means that the correlation is negative and moderate correlation. The other independent variables indicate very weak correlation with the dependent variable with size almost indicating no correlation with the dependent variable.

### 4.5 Regression Analysis

Regression analysis was undertaken in order to determine the significance of working capital on financial performance of listed manufacturing firms at NSE Kenya.

#### 4.5.1 Regression Model Summary

The model summary indicates the reliability of the model used in analysis in the form of the coefficient of determination that is defined by $R^2$.

**Table 4.5: Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .688[a] | .473 | .421 | 17.5185341 |

a. Predictors: (Constant), X4= Capital Structure, X3 = Size, X2 = Acs Payable period, X1 = AR Collection Period

b. Dependent Variable: Y = ROA

The model summary shows a coefficient of determination of 42.1% which indicates that the model is strong. The coefficient of determination indicates the level in which changes in the dependent variable can be explained by changes in the independent variables in the model. Therefore the changes in financial performance can be explained to an extent of 42.1% by changes in the study variables. The other changes in financial performance are explained by other factors that are not in the model.

#### 4.5.2 Analysis of Variance

ANOVA is used to show the significance of the independent variables in explaining the dependent variable. In this study the ANOVA shows the significance of the relationship between working capital management and financial performance of listed manufacturing firms at the NSE Kenya. It is also used to indicate whether to reject or

fail to reject the null hypothesis. The null hypothesis is rejected if the calculated value of F is greater than the critical F.

**Table 4.6: ANOVA TABLE[b]**

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 11033.553 | 4 | 2758.388 | 8.988 | .000[b] |
| Residual | 12275.962 | 40 | 306.899 | | |
| Total | 23309.514 | 44 | | | |

a. Dependent Variable: Y = ROA

b. Predictors: (Constant), X4= Capital Structure, X3 = Size, X2 = Acs Payable period, X1 = AR Collection Period

Source: Author, (2019)

The null hypothesis for the study states there is no effect of working capital on financial performance of listed manufacturing firms at NSE in Kenya. The calculated F is 8.99 which is greater than F critical value of 2.61. Therefore, the null hypothesis is rejected.

The significance (p-value) is below alpha 0.05. It therefore indicates that the relationship is statistically significant. The study therefore concludes that there is statistically significant effect of working capital on financial performance of listed manufacturing firms at the NSE in Kenya.

### 4.5.3 Correlation Coefficients

**Table 4.7: Coefficients Correlation Table[a]**

| Model | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. | 95.0% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | | | Lower Bound | Upper Bound |
| (Constant) | 16.551 | 29.440 | | .562 | .577 | -42.950 | 76.052 |
| X1 = AR Collection Period | -.233 | .497 | -.069 | -.468 | .642 | -1.236 | .771 |
| X2 = Acs Payable period | -.075 | .013 | -.695 | -5.586 | .000 | -.102 | -.048 |
| X3 = Size | .471 | 1.837 | .038 | .256 | .799 | -3.241 | 4.183 |
| X4= Capital Structure | .108 | .461 | .029 | .234 | .817 | -.824 | 1.039 |

a. Dependent Variable: Y = ROA

Source: Author, (2019)

Coefficient of determination was used to analyze the model of fitness on how the independent variables had a joint impact to dependent variable. The regression model represented by $Y = \beta_0 + \beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4 + e$ was therefore reduced to

$Y= 16.55 – 0.233X_1 – 0.075X_2 + 0.471X_3 + 0.108X_4+ 29.44$

This shows that if all the variables were held constant and accounts receivable collection period is increased by a single day, then the ROA of the firms would decrease by 0.23%. Similarly increasing the accounts payable period by a day while holding all other factors constant would decrease financial performance by 0.075%. On the other hand increasing size by ln of 1 would increase financial performance by 0.471% and 0.108% if capital structure is increased by a unit.

### 4.6 Interpretation of Findings and Summary

The variables indicated that listed manufacturing companies at NSE had a mean of 6.5% in financial performance with a high deviation from the mean at 23%. This therefore suggests that the performance for these firms varies significantly depending on individual policies that are adopted by the company. Similarly, the firms indicated a mean of low accounts receivable collection period of only 8 days. This is interpreted to mean that most of these firms sell on cash basis that implies that it may reduce their revenue since some clients would prefer purchasing products on credit basis. Discouraging credit sales in the firms has an impact of reducing total sales that may limit the performance of the firms. On the other hand the accounts payable collection period is significantly high at 209 days. This shows that the firms have basically employed a policy of collecting receivables as early as possible while at the same time they pay payables as late as possible. This policy may have a positive impact on their cash flows but, it may also have negative impact on developing strenuous relationship with suppliers and at the same time, missing on cash discounts from the suppliers that would increase the costs of inputs for the firms.

The regression model indicates that there is a statistically significant effect of working capital on financial performance. Working capital defined by both accounts receivable and payables collection period indicate that when the number of days for accounts receivable period are increased, then financial performance of the firms decreases. This could be explained from the fact that increasing accounts receivable collection period decreases cash flows for the firms. Similarly increasing accounts payable collection period by a day decreases financial performance. This could be as a result of increased tension with the suppliers and loss of credit limits. Size and capital structure are positively related to financial performance. This means that increasing

the size of the firms increases the financial performance of the firm. This could be explained by the fact that large firms are able to benefit from economies of scale. Similarly increasing capital structure entails increasing debt over equity. Availability of debt in a firm increases financing options of the company and are therefore able to undertake more projects with positive NPV that improves their financial performance. The study findings are consistent with findings by Mathuva (2015), Yegon et al. (2014) and a study by Sajjad & Bukhari (2017). The study findings are however inconsistent with a study undertaken by Temtime (2016) and Karuri and Nikkinen (2010).

# CHAPTER FIVE
# SUMMARY CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Introduction

The chapter of the study provides main findings of the research, discussions concerning WC and ROA of listed manufacturing firms. This entailed bringing out conclusions of the study and policy recommendations on further research to be done.

## 5.2 Summary of Research Findings

The study findings showed that accounts receivable collection period if increased by a single day led to a decrease of financial performance by 0.23%. However the variable is moderately correlated with financial performance with a Spearman's correlation of r = -0.33.This implied that firms with effective and shorter accounts collection period have positive report on the ROA. These study findings are in line to a study conducted by El Maude and Shuaib (2016) on empirical association of working capital management components and firm performance of listed food beverages in Nigeria. The study adopted secondary data and using Ordinary Least Squares techniques of data analysis showed accounts collection period had a significant and positive effect on the performance of listed food firms in Nigeria.

The second independent variable assessed the effects of accounts payable period on ROA of listed manufacturing companies in Nairobi Securities Exchange. From the study analysis of the findings, there was a negative and very weak correlation between APP and firm ROA with r = -0.177. This could be explained by the fact that the APP levels in the firms is significantly high with a mean of over 200 days. This has significant damage on the reputation of the firm as well as decreasing the credit rating of the firm. It therefore goes that increasing the number of days would lead to decrease in financial performance as credit rating of the firm deteriorates further.

Increasing the APP by one day would lead to a decrease in financial performance by 0.08%.

In a study conducted by Mathuva (2015) on the influence of working capital management components on corporate return. The study sampled 30 firms listed in the NSE for the year 1993 to 2008. The study findings indicated that there exists a highly positive relationship between the size of the firm, time taken for a firm to pay it creditors and the profitability. Thus, the longer the firm takes to pay its suppliers, the more profitable it is with special consideration of managing its reputation. Thus, the findings were consistent with the findings of the study only that it would be cumbersome for the firm to manage its reputation for an APP of over 200 days.

The study also determined the effects of Size of a firm on financial performance. The study indicated that increasing the size of a firm by one unit would lead to an increase in financial performance. This was explained by the fact that increasing the size of a company would enable the firm enjoy economies of scale that help in increasing financial performance. This is also consistent with the study by Mathuva (2015).

The findings of the study, also indicates that increasing the debt equity capital structure would also lead to increase in financial performance. This tells us that the firms if they are in position to secure long term loans, there are a number of existing projects with positive NPV and of which if undertaken by the firms would improve the financial performance.

### 5.3 Conclusions

Based on the findings, the study concluded that there is a significant negative relationship between accounts collection period and ROA. It therefore concludes that increasing the number of days a firm undertakes to collect receivables will lead to

decrease in financial performance. Increasing the ACP reduces the cash flows in the firm that may have adverse effects on financial performance of the firm.

The effect of accounts payable period as a WC component that impacts on the on ROA of listed companies in Nairobi Securities Exchange was considered. Companies have policies on accounts payable on paper but does not work in real work and most firms end up delaying their payables and hastening their receivables when settling the payment. The prorate concept brings on the spiral effect not only to the trading partners but also to the general industry at large. From the findings there was a negative and significant relationship between the APP and firm ROA. It is worthy to conclude that the accounts payable period has a huge impact on the performance of firms.

The company size and the financing component for debt and equity registered a positive impact on the ROA. This exemplified by the fact that having more sound resources and capital in the businesses has a proportionate effect to the stability and returns when the management is very competitive.

### 5.4 Policy Implications and Recommendations

The study findings and presentations gave an in-depth overview of how different aspects of WC influence on the ROA of the listed manufacturing firms. Given that most of the manufacturing firms deal with lots of inventories, have more assets and require massive investment to operate. Thus, it is good that the government puts up supportive business infrastructure to facilitate smooth operations.

The study recommends that the management of these firms need to reconsider their working capital management techniques. The operations of the firms indicate that they operate in both extremes, where they have extremely low ACP and extremely

high APP. These policies have negative impacts on financial performance and therefore the firms would be better off if they would increase the number of days to collect receivables, where they would increase credit sales. On the other hand, they ought to reduce the number of days they take to pay their payables. This would lead to improving their credit rating and improve relationship with suppliers that would impact positively on financial performance.

The study also recommends that manufacturing firms listed at NSE are possible investment areas, since they indicate that if financing is availed, it leads to increase in financial performance, which indicates that they have investment projects where investment in these projects produces positive NPV.

Manufacturing firms needs to train their personnel to fully understand their sector and best ways on how to strengthen their operation through competitive analysis and benchmarking with other manufacturing firms in developed nations.

### 5.5 Limitations of the Study

The current study focused purely on analyzing the effects of WC on ROA for manufacturing companies in the Nairobi Securities Exchange. Thus the study did not consider other firms not listed in the NSE of which they have a significant impact to the economy. The scope of operation of listed firms are totally different from those that are not listed hence the need to consider other factors that are relevant and not considered in the study.

The study assumed that all the sales undertaken by the firms were on credit basis. However manufacturing firms make cash sales as well as credit sales. The total number of credit sales was therefore limited to mean all the sales undertaken by the firm and ignored cash sales.

There are also so many firms in the manufacturing industry in Kenya. However the study was limited to obtain data from listed manufacturing firms since the data for these firms was readily available in their website as well as in the NSE handbooks. Use of all the manufacturing firms in Kenya, and perhaps random sampling applied would provide different results that could be more representative of the situation in the manufacturing industry in Kenya.

The study also relied on secondary data that was published on NSE handbook. Therefore the study was limited to the accuracy with which the data was presented in the NSE handbook. In the instance of earning managements that may be in the data, this study did not undertake further scrutiny other than the basic understanding that the data had been audited and presented to the capital market Authority (CMA) for further publishing. The data was therefore assumed to be accurate.

The study considered a time frame of five years only which was limited. This in turn limited the data collection and binds it to that specific period instead of looking at a lengthy period of time. The time available and assigned for the research study was also short.

### 5.6 Areas of further Study

The study concentrated on presenting the effects of WC on firms' ROA listed in the Nairobi Securities Exchange. Further, research should be carried out on analyzing working capital in other sectors apart from the manufacturing and their related performance. The researcher would encourage other scholars to carry out research on the context of working capital in public private corporations and their financial performance.

Similar study may be undertaken, where actual credit sales and credit purchases are considered for each manufacturing firm. These may improve the accuracy of the result findings where the findings of the study would be compared to the findings of this study and conclusions made.

A similar study would also be undertaken on the same variables but the population should be increased to capture manufacturing firms that are not listed as well in the sample. This would present the true picture of the state of manufacturing firms in Kenya and how their strategies on WC affect their financial performance.

A similar study may also be undertaken where, methodology applied should focus on primary data, or a mix of both primary and secondary data to increase reliability of data collected for the study variables.

The time frame should be more extensive when conducting a similar study. Both the time available for the study and the period of study and data collection should be extended to make the research more reliable.

## REFERENCES


Abbas, A. O., &Yushan, C. (2016). Does Effective Working Capital Management Increase Profitability? Evidence: Tanzania Insurance Company. *Journal of Accounting and Financial Management*, *2*(4), 12-20.

Abor, J. Y. (2017). Working Capital Management. In *Entrepreneurial Finance for MSMEs* (pp. 225-255). Palgrave Macmillan, Cham.

Adekola, A., Samy, M., & Knight, D. (2017). Efficient working capital management as the tool for driving profitability and liquidity: a correlation analysis of Nigerian companies. *International Journal of Business and Globalisation*, *18*(2), 251-275.

Afrifa, G. A., Tauringana, V., &Tingbani, I. (2014). Working capital management and performance of listed SMEs. *Journal of Small Business & Entrepreneurship*, *27*(6), 557-578.

Aktas, N., Croci, E., &Petmezas, D. (2015). Is working capital management value-enhancing? Evidence from firm performance and investments. *Journal of Corporate Finance*, *30*, 98-113.

Baños-Caballero, S., García-Teruel, P. J., &Martínez-Solano, P. (2016). Financing of working capital requirement, financial flexibility and SME performance. *Journal of Business Economics and Management*, *17*(6), 1189-1204.

Baños-Caballero, S., García-Teruel, P. J., &Martínez-Solano, P. (2014). Working capital management, corporate performance, and financial constraints. *Journal of Business Research*, *67*(3), 332-338.

Bhalla, V. K. (2014). *Working capital management*. S. Chand Publishing.

Boțoc, C., & Anton, S. G. (2017). Is profitability driven by working capital management? Evidence for high-growth firms from emerging Europe. *Journal of Business Economics and Management*, *18*(6), 1135-1155

Bryman, A., & Bell, E. (2015). *Business research methods*. Oxford University Press, USA

Charitou, M. S., Elfani, M., & Lois, P. (2016). The Effect of Working Capital Management On Firm's Profitability: Empirical Evidence From An Emerging Market. *Journal of Business & Economics Research (Online)*, *14*(3), 111.

Desai, M. A., Foley, C. F., & Hines Jr, J. R. (2016). Trade credit and taxes. *Review of Economics and Statistics*, *98*(1), 132-139.

Farina. & Mauri, A. (2014). Corporate Financial Risk Management: Governance and Disclosure post IFRS 7, *Journal of Financial Risk Management*,

Filbeck, G., Zhao, X., & Knoll, R. (2017). An analysis of working capital efficiency and shareholder return. *Review of Quantitative Finance and Accounting*, *48*(1), 265-288.

Friedman, M. (2017). Quantity theory of money. *The New Palgrave Dictionary of Economics*, 1-31.

Jamalinesari, S., &Soheili, H. (2015). The relationship between the efficiency of working capital management companies and corporate rule in Tehran Stock Exchange. *Procedia-Social and Behavioral Sciences*, *205*, 499-504.

Karadag, H. (2015). Financial management challenges in small and medium-sized enterprises: A strategic management approach. *EMAJ: Emerging Markets Journal*, *5*(1), 26-40.

Karuri, M., &Nikkinen, J. (2010). The impact of working capital management on firm profitability in different business cycles: Evidence from Kenya. *Research in International Business and Finance*, *32*, 36-49.

Kodongo, O., Mokoaleli-Mokoteli, T., &Maina, L. N. (2015). Capital structure, profitability and firm value: panel evidence of listed firms in Kenya. *African Finance Journal*, *17*(1), 1-20.

Kroes, J. R., &Manikas, A. S. (2014). Cash flow management and manufacturing firm financial performance: A longitudinal perspective. *International Journal of Production Economics*, *148*, 37-50.

Lavoie, M., &Reissl, S. (2018). *Further insights on endogenous money and the liquidity preference theory of interest* (No. 17-2018). IMK at the Hans Boeckler Foundation, Macroeconomic Policy Institute.

Lynch, L. J. (2017). MGM Mirage—Accounts Receivable. *Darden Business Publishing Cases*, *1*(1), 1-6.

Mathuva, D. (2015). The Influence of working capital management components on corporate profitability.

Mathuva, D. (2015). The Influence of working capital management components on corporate profitability.

Mishra, U., &Gurav, A. (2017). A Study on Impact of Accounts Receivable on Working Capital and Profitability at SH Kelkar Ltd Company,

Mumbai. *International Journal of Research in Finance and Marketing*, *7*(6), 220-225.

Mugenda, A and Mugenda, O. (2012). Research methods dictionary. Nairobi, Kenya arts press2012.

Musau, J. W. (2015). *The effects of working capital management on profitability of public listed energy companies in Kenya* (Doctoral dissertation, Strathmore University).

Muturi, W.(2013) Factors Affecting the Financial Performance of Listed Companies at the Nairobi Securities Exchange in Kenya Research *Journal of Finance and Accounting*.

Mwangi, L. W., Makau, M. S., &Kosimbei, G. (2014). Effects of working capital management on performance of non-financial companies listed in NSE, Kenya. *European journal of business and management*, *6*(11), 195-205.

Mwangi, L. W., Makau, M. S., &Kosimbei, G. (2014). Relationship between capital structure and performance of non-financial companies listed in the Nairobi Securities Exchange, Kenya. *Global Journal of Contemporary Research in Accounting, Auditing and Business Ethics*, *1*(2), 72-90.

Ng, S. H., Ye, C., San Ong, T., &Teh, B. H. (2017). The Impact of Working Capital Management on Firm's Profitability: Evidence from Malaysian Listed Manufacturing Firms. *International Journal of Economics and Financial Issues*, *7*(3), 662-670.

Nicodano, G., & Regis, L. (2018). A Trade-off Theory of Ownership and Capital Structure. *Journal of Financial Economic*

Nicodano, G., & Regis, L. (2018). A Trade-off Theory of Ownership and Capital Structure. *Journal of Financial Economics*

Nielsen, C., Roslender, R., &Schaper, S. (2016, March). Continuities in the use of the intellectual capital statement approach: Elements of an institutional theory analysis. In *Accounting Forum* (Vol. 40, No. 1, pp. 16-28). Elsevie

Nwude, E. C., &Agbo, E. I. (2018). Impact of Accounts Receivable Period on The Profitability of Quoted Insurance Companies in Nigeria. *Transylvanian Review*, *1*(11).

Nyabenge, O. (2014). Effect of Working Capital Management on Financial Performance of Manufacturing Firms in Kenya. *Journal of Accounting & Economics*, *2*(1), 17-23

Pais, M. A., & Gama, P. M. (2015). Working capital management and SMEs profitability: Portuguese evidence. *International Journal of Managerial Finance*, *11*(3), 341-358.

Pais, M. A., & Gama, P. M. (2015). Working capital management and SMEs profitability: Portuguese evidence. *International Journal of Managerial Finance*, *11*(3), 341-358.

Pandey, I. M. (2015). *Financial Management*. New Delhi, India: Vikas Publishing House.

Paul, S. Y., Guermat, C., & Devi, S. (2018). Why do firms invest in accounts receivable? An empirical investigation of the Malaysian manufacturing sector. *Journal of Accounting in Emerging Economies*, *8*(2), 166-184.

Peri, P. (2015). Working capital management in Start-ups. An Exploratory Research on Swedish Start-ups. Unpublished Msc Thesis. Lund University.

Sajjad, M. & Bukhari, K. S. (2017). Relationship between Working capital management and Profitability- Case of Pakistan Textile Sector. BahauddinZakariya University Multan, Pakistan

Salawu, R. O., &Alao, J. A. (2014). Determinants of working capital management: Case of Nigerian manufacturing firms. *Journal of Economics and Sustainable Development*, *5*(14), 49-56.

Salman, A. Y., Folajin, O. O., &Oriowo, A. O. (2014). Working capital management and profitability: a study of selected listed manufacturing companies in nigerian stock exchange. *International Journal of Academic Research in Business and Social Sciences*, *4*(8), 287.

Samiloglu, F., &Akgün, A. İ. (2016). The relationship between working capital management and profitability: Evidence from Turkey. *Business and Economics Research Journal*, *7*(2), 1.

Schenkel, M., Krikke, H., Caniëls, M. C., & van der Laan, E. (2015). Creating integral value for stakeholders in closed loop supply chains. *Journal of Purchasing and Supply Management*, *21*(3), 155-166

Singh, K., & Best, P. (2016). Interactive visual analysis of anomalous accounts payable transactions in SAP enterprise systems. *Managerial Auditing Journal*, *31*(1), 35-63.

Ukaegbu, B. (2014). The significance of working capital management in determining firm profitability: Evidence from developing economies in Africa. *Research in International Business and Finance*, *31*, 1-16.

Vazquez, X. H., Sartal, A., & Lozano-Lozano, L. M. (2016). Watch the working capital of tier-two suppliers: a financial perspective of supply chain

collaboration in the automotive industry. *Supply Chain Management: An International Journal*, *21*(3), 321-333.

Williman, N. (2017). *Research methods: The basics*. Routledge

Yazdanfar, D., &Öhman, P. (2014). The impact of cash conversion cycle on firm profitability: An empirical study based on Swedish data. *International Journal of Managerial Finance*, *10*(4), 442-45.

Yegon, C. K., Kiprono, K. J., & Willy, C. (2014). Working Capital Management and Corporate Financial Performance: Evidence from Panel Data Analysis of Selected Quoted Tea Companies in Kenya. *Research Journal of Finance and Accounting*, *5*(5), 53-62.

## APPENDICES

### Appendix I: Data Collection Sheet

## Company Name……

| Variable / Year | 2018 | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|
| Cost of sales | | | | | |
| Gross operating profit | | | | | |
| Accounts Receivable | | | | | |
| Accounts Payable APP | | | | | |
| Total Assets | | | | | |
| Total Equity | | | | | |
| Total Debt | | | | | |

## Data

| Company | BOC | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | Assets | Equity | Debt | Sales | Income | Cost of sales | Payables | Receivables | Average receivables |
| 2018 | 2,141,747 | 1,519,496 | 622,251 | 1296679 | 65,577 | 486,259 | 581,954 | 306,229 | 25519.08333 |
| 2017 | 2,228,669 | 1,611,082 | 617,322 | 1186420 | 39,379 | 466,459 | 593,555 | 259,604 | 21633.66667 |
| 2016 | 2,215,302 | 1,689,449 | 525,853 | 1076719 | 126,323 | 524,047 | 525,853 | 320,284 | 26690.33333 |
| 2015 | 2,320,956 | 1,714,106 | 606,850 | 967626 | 148,600 | 603,181 | 606,850 | 359,601 | 29966.75 |
| 2014 | 2,300,320 | 1,747,188 | 553,132 | 967486 | 229,625 | 667,502 | 553,132 | 320,957 | 26746.41667 |
| Company | British America Tobacco Kenya Limited | | | | | | | | |
| Year | Assets | Equity | Debt | Sales | Income | Cost of sales | Payables | Receivables | Average receivables |
| 2018 | 12,555,800 | 9,318,820 | 8,414,142 | 21032333 | 4,084,523 | 11,316,681 | 4,994,656 | 2,414,218 | 201184.8333 |
| 2017 | 11,228,758 | 7,840,223 | 9,820,389 | 22257182 | 3,336,006 | 10,731,063 | 4,615,132 | 2,834,757 | 236229.75 |
| 2016 | 12,153,840 | 8,796,789 | 9,703,911 | 36676249 | 4,234,334 | 10,991,821 | 4,540,018 | 2,541,910 | 211825.8333 |
| 2015 | 12,080,481 | 8,853,178 | 9,828,006 | 34467704 | 4,976,256 | 11,824,138 | 4,384,320 | 2,498,925 | 208243.75 |
| 2014 | 11,070,605 | 8,126,922 | 10,126,588 | 34,124,565 | 4,255, 314 | 11,818,577 | 5,548,105 | 2,625,373 | 218781.0833 |
| Company | Carbacid Investment | | | | | | | | |
| Year | Assets | Equity | Debt | Sales | Income | Cost of sales | Payables | Receivables | Average receivables |
| 2018 | 1956195 | 3,044,214 | 42738 | 826360 | 298,526 | 206,292 | 84,611 | 146,606 | 12217.16667 |
| 2017 | 1863210 | 2,924,084 | 63148 | 809719 | 352,300 | 196,732 | 124,454 | 147,680 | 12306.66667 |
| 2016 | 3081768 | 2674198 | 407570 | 831761 | 261,051 | 298,955 | 9091 | 21118 | 1759.833333 |
| 2015 | 2,968,727 | 2,477,026 | 491701 | 589380 | 456,109 | 276,473 | 10,379 | 20,068 | 1672.333333 |
| 2014 | 1,213,723 | 1,184,646 | 29,077 | 753164 | 490,641 | 346,696 | 128,863 | 178,833 | 14902.75 |
| Company | East Africa Breweries | | | | | | | | |
| Year | Assets | Equity | Debt | Sales | Income | Cost of sales | Payables | Receivables | Average receivables |
| 2018 | 71246826 | 16,281,838 | 59,594,790 | 73,456,832 | 7,255,555 | 41,052,409 | 24,629,299 | 3,825,755 | 318812.9167 |
| 2017 | 66666312 | 20,138,708 | 66,515,426 | 70,247,065 | 8,514,568 | 39,116,742 | 20,814,011 | 5,862,696 | 488558 |
| 2016 | 61746205 | 10,867,246 | 50,878,959 | 64,322,220 | 10,270,813 | 32,110,383 | 21,920,678 | 11,572,146 | 964345.5 |
| 2015 | 65155959 | 13,353,183 | 51,802,776 | 64,420,458 | 9,574,905 | 32,389,041 | 14,142,200 | 9,113,813 | 759484.4167 |
| 2014 | 62,865,943 | 9,100,848 | 53,765,095 | 61,292,176 | 6,858,608 | 31,098,550 | 12,351,560 | 7,716,617 | 643051.4167 |
| Company | Mumias Sugar | | | | | | | | |
| Year | Assets | Equity | Debt | Sales | Income | Cost of sales | Payables | Receivables | Average receivables |
| 2018 | 15735609 | -14,385,103 | 27530373 | 1,379,223 | -15,141,253 | 3,893,965 | 13,269,042 | 107,838 | 8986.5 |
| 2017 | 24091095 | 756,580 | 23334515 | 2,091,751 | -6,773,934 | 5,279,897 | 11,174,555 | 1,194,017 | 99501.41667 |
| 2016 | 27018727 | 7693783 | 19324944 | 6,285,917 | -4731026 | 8040339 | 8029333 | 1049001 | 87416.75 |
| 2015 | 20432980 | 5932044 | 14500936 | 5,531,357 | -4644801 | 7191569 | 7630451 | 1533876 | 127823 |
| 2014 | 23,563,086 | 10,641,805 | 12921281 | 13,075,912 | -2,706,595 | 6,382,030 | 4,898,879 | 2,550,785 | 212565.4167 |
| Company | Unga Group Ltd | | | | | | | | |
| Year | Assets | Equity | Debt | Sales | Income | Cost of sales | Payables | Receivables | Average receivables |
| 2018 | 1,668,924 | 1,358,152 | 4,323,589 | 17002302 | -21,549 | 16,671,007 | 310,772 | 2,813,438 | 234453.1667 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2017 | 10267471 | 5478955 | 4788516 | 18723250 | -32286 | 17285467 | 3807201 | 2440807 | 203400.5833 |
| 2016 | 9199783 | 5696729 | 3503054 | 18947944 | 508816 | 16734683 | 2284368 | 2072416 | 172701.3333 |
| 2015 | 8671788 | 5355279 | 3316509 | 19528785 | 621866 | 16747840 | 2007547 | 2028388 | 169032.3333 |
| 2014 | 8,026,578 | 4,687,243 | 3,339,335 | 19982070 | 474,494 | 15,335,027 | 2,047,154 | 1,717,828 | 143152.3333 |
| Company | Eveready East Africa | | | | | | | | |
| Year | Assets | Equity | Debt | Sales | Income | Cost of sales | Payables | Receivables | Average receivables |
| 2018 | 573768 | 437667 | 136101 | 736205 | -116,395 | 220,180 | 108956 | 155161 | 12930.08333 |
| 2017 | 772652 | 549370 | 223282 | 602845 | 267,173 | 251610 | 149600 | 149235 | 12436.25 |
| 2016 | 1082806 | 486,578 | 596228 | 425016 | -206,505 | 425,016 | 144,107 | 94,805 | 7900.416667 |
| 2015 | 1333795 | 682,489 | 651306 | 251610 | -201,509 | 905,915 | 315,049 | 184,855 | 15404.58333 |
| 2014 | 930,057 | 218,465 | 711,592 | 251720 | 54,811 | 883,215 | 185,456 | 242,391 | 20199.25 |
| Company | Kenya Orchads | | | | | | | | |
| Year | Assets | Equity | Debt | Sales | Income | Cost of sales | Payables | Receivables | Average receivables |
| 2018 | 114565 | 24,244 | 71974 | 72239 | 8,886 | 53,028 | 27,442 | 55,991 | 4665.916667 |
| 2017 | 108278 | 15,413 | 62692 | 73691 | 5,734 | 60,361 | 31,272 | 59,560 | 4963.333333 |
| 2016 | 89240 | 9,733 | 79507 | 64586 | 3,763 | 56,607 | 20,883 | 45,444 | 3787 |
| 2015 | 78730 | 6,025 | 72704 | 60974 | 28,915 | 54,194 | 16,110 | 32,165 | 2680.416667 |
| 2014 | 70596 | 2,481 | 68114 | 58062 | 2,415 | 44,124 | 11,843 | 15,523 | 1293.583333 |
| Company | Flame Tree Group Holdings Limited | | | | | | | | |
| Year | Assets | Equity | Debt | Sales | Income | Cost of sales | Payables | Receivables | Average receivables |
| 2018 | 1,839,271 | 813,034 | 423,295 | 2,488,610 | 33,785 | 1,727,327 | 596,249, | 735,813 | 61317.75 |
| 2017 | 1,680,769 | 731,460 | 422,938 | 2,425,090 | 39,754 | 1,626,812 | 524,928 | 784,335 | 65361.25 |
| 2016 | 1,521,194 | 719,166 | 802027 | 6285917 | 144,980 | 1,640,312 | 380,779 | 745,102 | 62091.83333 |
| 2015 | 1,326,531 | 581,921 | 744608 | 5531357 | 178,848 | 1,476,312 | 273,027 | 641,999 | 53499.91667 |
| 2014 | 1,009,568 | 362,087 | 647479 | 1,764,847 | 132,780 | 1,320,401 | 203,846 | 518,494 | 43207.83333 |