EFFECT OF WORKING CAPITAL MANAGEMENT ON CORPORATE FINANCIAL PERFORMANCE: A SURVEY OF AUTOMOBILE AND ACCESSORIES COMPANIES LISTED AT NAIROBI SECURITIES EXCHANGE, KENYA

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A Research Project Submitted to the School of Business and Economics in Partial Fulfillment of the Requirements for the Award of the Degree of Master of Business Administration (Finance Option), Kabarak University

November, 2017

DECLARATION AND APPROVAL

Declaration

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

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Approval

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

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DEDICATION

I would like to dedicate this work to my friends and my family for their continued support during my studies.

ACKNOWLEDGEMENT

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ABSTRACT

Working capital management entails the relationship between a firm's current assets and its current liabilities and it plays an integral role in financial decision making. It involves the management of the most liquid resources of the firm which includes cash and cash equivalents, Inventories and trade and other receivables. Majority of firms do not maintain the correct mix of working capital and this has been a major hinder to their overall profitability. The main goal of working capital management is to ensure that a firm maintains a healthy liquidity position. Previous studies have been conducted on the effects of working capital management on financial performance both locally and globally providing conflicting results. The study aimed to iron out these differences by analyzing the effects of working capital management on corporate financial performance and confined itself within automobile firms listed on the Nairobi Securities Exchange. The study purposed to form a basis for policy creation and implementation in the area of working capital management, identify priority cash management techniques to be employed in working capital management in addition to providing a platform for further research on related field of working capital management. The study was anchored on cash conversion cycle theory, working capital management theory and Keynesian theory of money and supported by existing related literature in relation between working capital management and financial performance. The study adopted a quantitative research design, targeting the all listed automobile firms trading on the Nairobi Securities Exchange. Data was obtained from in-depth analysis of consolidated financial reports of years 2007-2016. Thereafter data was analyzed using panel data methodology. Random effects models and correlation analysis with the help of stata statistical analysis software were used to determine the relationships between working capital management and the corporate financial performance of these firms. The findings and results were presented on tables and charts. The study concluded that, inventory conversion period had a positive correlation with return on assets while average receivables period, cash conversion cycle and average payables period had negative correlation though none of the variables under study was statistically significant. The study also reported 6.8 % variation in returns on assets to be caused by working capital management and the study suggested that other components affecting financial performance be carried on the same companies. The study further recommends that finance managers should review specific policies regarding each component of working capital management as they have combined effects on financial performance. Also relevant institutions should consistent monitoring of competencies of financial manager.

Key words: Corporate Financial performance, Working capital management, Nairobi Securities Exchange. Average receivables period, average payables period, inventory conversion period cash conversion cycle

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ABBREVIATIONS AND ACRONYMS

APP	Average Payment Period
ARP	Average receivables period
AVA	Associated Vehicle Assemblers
AVP	Average payment period
BDRC	Business Development Research Consultants
CAGR	Compound Annual Growth Rate
CCC	Cash conversion cycle
EAC	East Africa Community
EBIT	Earnings before Interest and Tax
FGLS	Feasible Generalized least square
GDP	Gross Domestic Product
ICP	Inventory Conversion period
KNBS	Kenya National Bureau of Statistics
KVM	Kenya vehicle Manufacturers
NSE	Nairobi Securities Exchange
ROA	Return on Assets
USA	United States of America
WCM	Working Capital Management

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Financial management instruments are essential viewpoints in viable financial decision making since they summon solid's organization's dedication and administrative support. More often capital budgeting and working capital management have been employed in corporate financial management. Working capital management examines the relationship between short-term assets and short-term liabilities and it reflects the investments that circles from one form to another in the daily business operations. The process oversees control of the firm's cash, inventories, and accounts receivable/payable. This thought embraces the transition from stock/ inventories to receivables and lastly to cash that creates a business cycle of a firm (Gitman, 2015). It measures the liquidity position of a firm by comparing the current assets to current liabilities and it indicates how a firm can meet its obligations. Most Financial managers encounter the challenge of coordinating current assets and current liabilities and maintaining them at required mix. It is critical for a firm to maintain their short-term speculations to guarantee its solidness in longer period and furthermore adaptability to do their marketable strategies. (Ellely, 2004).

Working capital management is considered to be among very important elements in analyzing the organizations' performance while conducting the daily operations, by which balance can be maintained between liquidity and profitability. Maintaining liquidity on daily basis operation to make sure it's running meets commitment, is an important aspect required in working capital management. It is a difficult task for mangers to ensure that the business function is running in a well-organized and advantageous manner. There are chances of inequality of current liability and current assets and during this procedure Firm's growth and profitability will be affected. Should this occurs and firm manger wouldn't be able to manage it operations efficiently the business survival will be in jeopardy.

Finance Managers faces a solid test in management of inventory to fulfill operation's needs and limiting stock handling cost which is an essential objective in cost administration. This objective isn't met without critical monitoring and evaluating of

inventory management. Analyzing an organization's inventories and receivables is a dependable method for deciding if it is a decent investment or not. To remain efficient and aggressive firms, endeavor to hold their stock levels down and accelerating accumulation of what they are owed. The span of cash conversion cycle measures how quick an organization can change over its cash on hand and create a greater amount of it. Ideally, the lower these number, the better for the organizations' administration of its working capital. Despite the fact that it ought to be combined with different measurements, (for example, return on equity and return on assets) it can be particularly helpful for benchmarking close competitors in light of the fact that the organization with the most minimal CCC is regularly the one with better administration (Kimeli 2012).

Adequate working capital will give a firm a competitive advantage as will enable it undertake expansion projects and increase its sales. This will give a platform for growth and increase in profitability. Working capital is a daily necessity for businesses, as they require a regular amount of cash to pay routine payments, cover unexpected costs and purchase basic materials used in production of goods. This calls for finance managers to have strategies which will help them achieve and maintain the right amount of inventory, accounts receivables, and cash so as to meet maturing short term liabilities and upcoming operational needs (Chemis 2015).

Past literatures have denoted that poor administration of working capital leads to business failure. Pandey (2015) observed that most failed businesses (up to 60%) were of the opinion that all or most of their failures were due to cash flow problems. The importance of cash flow is particularly evident when access to cash is difficult or expensive. When the real economy slips into recession, firms face an additional risk of customers running into financial difficulty and becoming unable to settle their invoices. This can lead to liquidity problems from non-operational sources such as bank loans.

In order to sustain their operations, it is important that firms effectively manage cash. Practically, it is difficult to predict cash flows. This is because there is hardly any synchronization between inflows and outflows which spurs the necessity of cash management. Cash is tied up in working capital an area of focus for corporate financial management. In most firms major portion of investment is constituted by

working capital. Maintaining cash in working capital is as much an investment like tying up cash in plant and equipment. Considering this, the management cannot overlook working capital management and its effects on financial performance of the firm. The main objective of working capital management is to enable the firm to have sufficient cash to sustain its operations and to have it meet its obligations (Eljelly, 2004). In today's business environment, all firms, regardless of their industry and size, need to acquire positive cash flow and liquidity. On the other hand, the way working capital is managed has also significant effects on the firm's financial performance.

A study conducted by BDRC a continental market research consultancy firm based in United Kingdom, on behalf of ABN AMRO a Dutch state owned bank in 2006 on 101 companies around Europe, USA and Canada found that 48% of companies have centralized liquidity management, that is, a large number still have the opportunity to efficiently manage their cash, hence the need for the study on cash management is a global issue. Thus, for automobile operations to be run effectively and efficiently, optimum working capital management techniques must be adopted as cash shortage can disrupt the firm's daily operation, while excessive cash can simply remain idle, without contributing anything in terms of return towards the firm's profitability.

1.1.1 Profile of Automobile industry in Kenya

Kenya's GDP per capita is expected to reach US$1 432 in 2020 and to grow at a CAGR of 7.5% between 2000 and 2020. This is expected to result in an increase in private consumption and amongst other things, drive the sales of motor vehicles. Expenditure on the purchase of cars, motorcycles and other vehicles accounted for 1.5% of total consumer expenditure in 2015 and is expected to remain relatively stable to 2025 as incomes rise. The volume of imported cars and motorcycles has been on the increase due to the availability of attractive credit from financial institutions and the rise of the middle class. (Kenya Motor Industry (KMI) 2012). According to the Kenya National Bureau of Statistics (KNBS) (2016), the volume of imported vehicles between 2003 and 2012 have grown at over 300% from 33 000 units to 110 474 units. Passenger vehicles were Kenya's fourth largest import overall in 2014, valued at US$420 million and making up 2.3% of total imports (by value) while commercial vehicles ranked seventh, valued at US$370 million. If the current

trend of 10% to 12% growth per annum on vehicle imports is to be maintained, Kenya will have five million vehicles on the road by the year 2030.

Kenya's automotive market is largely focused on retail and distribution of vehicles, and after-sales support in servicing and spare parts sales. Small scale assembly of motor vehicles is done at three assembly plants, the General Motors East Africa (GMEA) plant in Nairobi, the Associated Vehicle Assemblers (AVA) plant in Mombasa and the Kenya Vehicle Manufacturers (KVM) plant in Thika. All three of the plants are operating below their capacity. However, the country's good infrastructure, relative to other countries in the region, as well as its physical and strong economic position within the East Africa Community (EAC), makes it a potential hub for automotive assembly and production in the region. (Kenya Motor Industry (KMI) 2016).

The motor industry has sustained the drop in sales of new vehicles witnessed in 2016, with the numbers in the first quarter of 2017 declining further by nearly a third. New vehicle sales fell 27.4 per cent in the first three months to March 2017, pointing to a gloomy 2017 for the industry that has attracted major brands to start production locally. According to Kenya Motor Industry Association data (2017), dealers sold 2,687 units during the quarter, which was a dip from 3,699 units sold in the first three months of 2016. This mirrors the 2016 trend, where sales went down 30.6 per cent to 13,535 units. Almost all categories of vehicles were affected, but mini buses segment rose 25.9 per cent, medium trucks 24.3 per cent, and Sports Utility Vehicles 5.6 per cent and saloon cars 6.2 per cent. Hardest hit was the earthmovers segment, which experienced a 72.4 per cent decline, with only 77 units sold, compared to 279 units in the first quarter of 2016. The entire motor industry experienced a slowdown, with the number of vehicles, including second-hand imports, newly registered in the country went down by nearly 16 per cent to 213,700 in 2016, from 247,000 in 2015 (Kenya National Bureau of Statistics 2017). The report further highlighted that the volume of vehicles sold in 2016 plunged 30 per cent, with the industry selling about 13,535 vehicles compared with 19,523 units sold in 2015. An insight by General Motors East Africa (2016) shows all the major car dealers in the country experienced a sharp decline in sales over the year. It was the first time in five years that car sales for the seven leading car dealers in the country declined.

The automobile sector was part of the industrial sector which was the fourth biggest sector after Agriculture, Transport and Communication and Wholesale and retail trade. The industrial sector had 17 firms listed at Nairobi Securities Exchange (NSE) limited in 2010 but was split into four sectors in 2011 namely, the automobile and accessories, construction, energy and petroleum, and manufacturing sectors. As an important sector in the overall economic growth, automobile sector requires in depth analysis at industry as well as firm level. Currently, there are three (3) automobile and accessories firms listed in the Nairobi securities Exchange.

1.1.2   Financial performance of the Automobile industry in Kenya

Rising GDP and consumer purchasing power is also driving growth in the automobile segments and although the market continues to be dominated mainly by used imports, the rising demand for luxury and new vehicles, coupled with intensifying government efforts to promote and encourage local manufacturing, could see new vehicle sales begin to increase considerably over the coming years. According to the Kenya National Bureau of Statistics' "Economic Survey 2015," demand for commercial vehicles and luxury cars pushed total new and used motor vehicle registrations in Kenya up to 102,606 units in 2014, a 9% increase over 2013. Commercial panel van and pick-up truck registrations rose by 28% in 2014 to hit 12,658 units, while sales of new heavy trucks rose 11.6% to reach 10,681 units. The industry plays an important role in the economy as it creates employment, boost supportive industries in the country – For example, tire manufacturing, upholstery and many more and improves the transport industry

Automobile companies listed at Nairobi securities exchange are facing economic challenges of sustaining their shareholder's confidence. According to market trend analysis by NSE (2017), the report indicates that Marshalls East Africa, a firm that is engaged in selling and servicing of motor vehicles, holds the record for the longest drought, of not paying dividends to its shareholders at the NSE. The firm last paid dividends in October 2007, with investors offered Sh1 per share held. However, since 2012, its revenues have been in a free fall, plunging from Sh234.3 million to Sh81.3 million in 2016 financial year, and throwing the company into losses. Sameer Africa last announced a dividend of Sh0.30 in March 2014, while Car & General paid Sh0.60 the same year, a drop from Sh0.70 per share in 2013. Car and General was the only active automobile company listed under automobile and accessories sector still paying

dividends, further saw its share price fall by 33.3 % in the first quarter of 2017. From the report above it is evident that the listed automobile firms are facing an uphill task in business survival. It is on this notion the study choose the sector for analysis of working capital management and its effects on corporate financial performance. Mwaura (2013), on his study on the effect of financial planning on the financial performance of automobile firms in Kenya, suggested further studies to be carried out focusing on the financial planning and enhancing the financial performance of firms in the automobile industry in Kenya. Furthermore the researcher has interest in investing in the sector and it was with the drive that the study focused on automobile industry.

1.1.3 Relationship between working capital management and financial performance

Considering the importance of working capital management the study focused on Reference are made in relation to past studies; Oladipupo and Okafor (2013); Almazari, (2013); Akoto, Awunyo-Vitor and Angmor (2013); Maradi, Salehi and Arianpoor (2012); Nyabwanga, Ojera, Lumumba, Odondo and Otieno (2012 and Gill, Biger and Mathur (2010) among others.

However, there are a few studies with reference to Kenya on working capital management and firm profitability. To highlight a few of those studies, Mathuva (2010) focused on the influence of working capital management on corporate profitability of firms listed at the Nairobi Securities Exchange. Gakure, Cheluget, Onyango and Keraro (2012) on the other hand, analyzed the relationship between working capital management and performance of 15 manufacturing firms listed at the Nairobi Securities Exchange for a period of five years from 2006 to 2010. Duale (2016), examined effect of working capital management decisions on financial Performance of small holder tea factories in Kenya. Data was collected from 66 small and medium enterprises. However, these studies provide no evidence on the evaluation of the effects of working capital management practices on corporate financial performance of automobile firms in Kenya. In this regard, the objective of the current study is to provide empirical evidences about the effects of working capital management on corporate financial performance of automobile firms listed at the Nairobi Securities Exchange (NSE), during the period 2007–2016 financial years.

1.2 Statement of the Problem

Proper management of working capital is vital to a firm's fundamental financial performance and operational success of a business. This is anchored on the fact that having too much working capital implies inefficiency while too little cash in hand implies that the going concern of a business is put in jeopardy, thus, it is vital to all businesses to maintain an optimum level of working capital.

Many studies have been conducted both locally and internationally on the effects of working capital management on financial performance. Oladipupo and Okafor (2013); Almazari, (2013); Akoto, Awunyo-Vitor and Angmor (2013); Maradi, Salehi and Arianpoor (2012); Nyabwanga, Ojera, Lumumba, Odondo and Otieno (2012); and Gill, Biger and Mathur (2010) among others have presented their findings. However these studies are not focused on Automobile sector. Additionally these studies have provided conflicting findings as Duale (2016) found out that there is a positive correlation between average payment period and financial performance, while Simidi (2015), opine that there is a negative correlation between average payment period and financial performance. This study was aimed to address out these highlighted conflicting findings.

Furthermore Automobile firms have experienced a poor stock performance in the last five years between 2012 and 2016 financial years a factor which might hinder its attraction of potential investors. However, the extent to which financial performance of these firms is affected by management of working capital is not well known and it is on this premise that this study opted to analyze the effects of working capital management on financial performance.

1.3 Objectives of the Study

1.3.1 General Objective

To assess the effect of working capital management on corporate financial performance of automobile firms listed at Nairobi Securities Exchange, Kenya.

1.3.2   Specific Objectives

1. To determine the effect of Average receivables Period (ARP) on corporate financial performance of automobile firms listed at Nairobi Securities Exchange, Kenya.

2. To evaluate the effect of Inventory Conversion Period (ICP) on corporate financial performance of automobile firms listed at Nairobi Securities Exchange, Kenya.

3. To examine the effect of Average Payment Period (APP) on corporate financial performance of automobile firms listed at Nairobi Securities Exchange, Kenya.

4. To evaluate the effect of   cash conversion cycle on corporate financial performance of automobile firms listed at Nairobi Securities Exchange, Kenya.

1.4 Research Hypotheses

The study was supported by the following null hypotheses:

1. Ho_1: There is no significant relationship between Average receivables period and corporate financial performance of automobile firms listed at Nairobi Securities Exchange, Kenya.

2. Ho_2: There is no significant relationship between Inventory Conversion Period (ICP) and corporate financial performance of automobile firms listed at Nairobi Securities Exchange, Kenya.

3. Ho_3: There is no significant relationship between Average Payment Period (APP) and corporate financial performance of automobile firms listed at Nairobi Securities Exchange, Kenya.

4. Ho_4: There is no significant relationship between Cash Conversion Cycle (CCC) and corporate financial performance of automobile firms listed at Nairobi Securities Exchange, Kenya.

1.5 Significance of the Study

Upon its completion, the study intended to add value to the different sectors of the economy as follows; the study will form the basis for policy creation and implementation in the area of working capital management practices in the management and operation of the relevant corporate entities. This is because;

investors and the management of corporate institutions will be able to come up with appropriate established relationships between working capital management and financial performance that will add value to policy development. Secondly, the study is intended to give an insight to both corporate and individual investors as regards to the priority areas and techniques to be employed for the realization of effectiveness and efficiency in the management of cash as an organization's most essential asset. Fourthly, this study was able to identify the specific priority cash management techniques that maybe employed for better management of working capital and thus not only the assessment but the prioritization that apply in the implementation of the methods covered by the study. Lastly, the study intended to establish a platform upon which further research will be made possible in similar fields and the related aspects of capital management practices. This therefore implies that the study will not only bring value to policy making but also the academic arena by way of literature review, and suggested areas for future studies.

1.6 Scope the Study

The study assessed the effect of working capital management practices on corporate financial performance in Kenya, where it intended to obtain the relevant data to support the study from the listed automobile firms. The study confined itself to the listed automobile firms only so as to enhance data validity and reliability. Secondary data mainly financial statements covering 2007 to 2016 financial years were used to collect data from listed automobile firms to support the study. Financial management tools play a major role in financial stability of different corporations and hence decision making so as to improve firm's profitability and increase shareholders wealth. The findings, conclusions and recommendations of the study will therefore be applicable only to the firms considered by the study. The study was conducted between July and November 2017.

1.7 Limitations and delimitations of the Study

The study was confined to automobile firms listed at the Nairobi Securities Exchange (NSE), whose secondary source of data was mainly their audited Annual financial reports over the sampled years of study. Since annual reports were used, this may imply that accuracy may not be guaranteed following their initial method of data collection and analyses. Finally annual reports were historical data. However these

financial reports are to be verified by independent external auditors before being published. This enhanced reliability of data.

1.8 Operational Definition of Terms

The following terms assumed the stated meanings in the context of the study:

Automobile industry refers corporations engaging in the business of producing and selling self-powered vehicles, including passenger cars, trucks, farm equipment, and other commercial vehicles. (Sampaolo 2016). The study will adopt the definition of Automobile industry**, as** all those companies and activities involved in the manufacture, assembling of motor vehicles, including most components, such as engines and bodies, but excluding batteries, and fuel

Average receivables period: According Pandey IM (2015), average receivables period refers to the average number of days it takes a company to collect its accounts receivable.

Average receivables period of accounts receivable is the average number of days a firm takes to convert its account's receivables into cash. It also marks the average number of days it takes customers to pay their credit accounts. Average receivables period is computed by dividing the number of working days for a given period (usually an accounting year) by receivables turnover ratio.

ARP = $\quad$ Accounts Receivables *365 days
$\qquad\quad$ Sales

Average payment period: Average payment period refers to the average time taken by the company to make payments to its creditors (Pandey 2015). It also refers to the average number of days a firm takes to pay off its credit purchases. It is computed as:

APP = $\quad$ Accounts Payables *365 days
$\qquad\quad$ Cost of goods Sold

Cash conversion cycle (CCC): The cash conversion cycle (CCC) is a process or a cycle where the company purchases inventory, sells the inventory on credit as an account receivable, and then collects the account receivable or turns it into cash (Pandey, 2015).

It measures how long cash is tied up in inventory before the inventory is sold and cash is collected from customers. It attempts to measure the time it takes a company to convert its investment in inventory and other resource inputs into cash.

C.C.C=Average receivables period + Inventory Conversion period – Average payment Period

Corporate Financial Performance: Any of many different mathematical measures to evaluate how well a company is using its resources to make a profit. Common examples of financial performance include operating income, earnings before interest and taxes, and net asset value. It is important to note that no one measure of financial performance should be taken on its own. Rather, a thorough assessment of a company's performance should take into account many different measures (Farlex 2012).

Inventory conversion period: Pandey (2015), define Inventory conversion period as a ratio showing how many times a company's inventory is sold and replaced over a period of time. The days in the period can then be divided by the inventory turnover formula to calculate the days it takes to sell the inventory on hand.

$$ICP = \frac{\text{Inventory} * 365 \text{ days}}{\text{Cost of goods Sold}}$$

Working Capital management: Working capital management refers to the process where the firm invests in short-term assets in form of cash, and cash equivalents whereby they are in form of accounts receivables and inventory (Gretsenberg 2010). Working capital is represented by a firm's net investment in current assets necessary to support its everyday business. Working capital frequently changes its form and is sometimes also referred to as circulating capital. According to Gretsenberg 2010, circulating capital means current assets of a company that are changed in the ordinary course of business from one form to another.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature reviewed by the study, empirical studies relevant to the study, summary of literature review and the conceptual framework that supports the study with respect to working capital management in relation to corporate financial performance.

2.2 Theoretical Literature

Working capital management involves the management of the most liquid resources of the firm which includes cash and cash equivalents, inventories and Trade and other receivables with a view to enhance corporate financial performance. Working capital management refers to the process where the firm invests in short-term assets in form of cash, and cash equivalents whereby they are in form of accounts receivables and inventory. In most occasions these assets are financed by short term liabilities hence the aspect of net working capital measures the difference between current assets and current liabilities. Healthy net working capital implies that a firm is in a better position strategically to meet its short term debts, meet recurrent operational expenses and sustain the daily business operations of the entity through maintaining adequate cash balances. This is a major goal of working capital management and when met consistently the going concern of the entity is guaranteed.

(Pandey 2015), defined working capital management as the relationship between a firms short term assets and its short term liabilities. Padachi (2007) stated that the main goal of working capital management is to ensure that a firm meets its due short-term debts, cater for operational expenses and the same time continue with routine business operations. Working capital refers to current assets and in particular Cash, Debtors and Stocks (Manasseh, 2001). The fundamental principles of working capital management include: To set the optimal level of cash, debtors and stocks to be maintained by a firm, to reduce the long term costs associated with working capital financing, to maintain the liquidity of the firm so that it can be able to meet its financial obligations as and when they fall due. The study was anchored on the following theories:

2.2.1 Cash Conversion Cycle Theory

Cash conversion theory was propounded by Blinder and Maccini (2001), cash conversion cycle theory is the time it takes a company to convert its resource inputs into cash. It evaluates how effectively a firm is managing its working capital. In most cases, a company acquires inventory on credit, which results in accounts payable. A firm can also sell products on credit, which results in accounts receivable. Cash, therefore, is not involved until the firm pays the accounts payable and collects accounts receivable. So the cash conversion cycle measures the time between outlay of cash and cash recovery. This cycle is essential for retailers and similar businesses. This measure describes how quickly a company can convert its products into cash through sales. The shorter the cycle, the less time capital is tied up in the business processes, and thus the better for the company's bottom line.

The proponents of this theory argue that a short cycle allows a business to quickly acquire cash that can be used for additional purchases or debt repayment. The lower the cash conversion cycle, the more healthy a company generally is. Businesses try to shorten the cash conversion cycle by speeding up payments from customers and slowing down payments to suppliers. There are scenarios where by the length of cash conversion cycle can be negative; for instance, if the company has a strong market position and can control purchasing terms to suppliers that is it can postpone its payments (Brennan, 2003). Jain (2014) concluded that traditional ratios such as current ratio, Quick acid test and cash ratios cannot measure the true position about working capital and insisted, using inflows and outflows of cash as a product of acquisition, production, sales, payment and collection process done over time. The firm's ongoing liquidity is a function of its cash conversion cycle; hence the appropriateness of evaluation by cash conversion cycle, rather than liquidity measures.

The theory is relevant to the objectives of the study as it highlights the importance of maintaining the a short cash conversion cycle as healthy and this can be achieved through businesses shortening the average receivables period and inventory conversion period while lengthening the average payables period.

2.2.2 Working Capital Management Theory

Working capital management theory was advanced by (Smith, 2004). This theory is guided by two methods static and dynamic. Liquidity ratios are the anchor of static method. Commonly used ratios being current and quick ratios based on the data of balance sheet, measures liquidity at some point in time. The dynamic method is related to the operations of the company. Cash conversion cycle is a dynamic measurement of the time between cash payment for raw materials and then receiving it from accounts receivable. As far as the dynamics of ongoing liquidity management is concerned, cash conversion cycle combines both balance sheet and income statement data to measure liquidity with dimension of time. Working capital management theory is based on the traditional models of the CCC that was initiated by (Brennan, Maksimovic & Zechner, 2003).

It is a great measure to know that how fine a business entity is organizing its working capital. Blinder and Maccini (2001) concluded that cash conversion cycle is the most important aspect in working capital management. In fact it tells about the investment and credit decisions in the customer, inventory and suppliers, which show average number of days started from the date when the firm starts payments to its suppliers and the date when it begins to receive payments from its regulars. Bodie & Merton (2000) analyzed the trends in the WCM and its influence on business performance for small manufacturers of Mauritius. He reported that firm's needs for working capital changes over time depending on the rate of creation of money and high internal investment in inventories and receivables led to reduced profitability. There are two ideas of working capital in particular quantitative and subjective. As indicated by quantitative idea, the measure of working capital alludes to aggregate of current assets which on this premise considered as gross working capital. The subjective idea gives a thought in regards to source of financing capital. As indicated by subjective idea the measure of working capital alludes to positive difference of current assets over current liabilities (Abuzayed, 2012).

Both the ideologies of working capital have their own purposes of significance. In the event that the goals is to quantify the size and degree to which current resources are being utilized, Gross idea is valuable; whereas in evaluating the liquidity position of an undertaking, Net concept" becomes pertinent and preferable . At one given time

both the current assets and current liabilities exist in the business. The management of current assets and current liabilities is part of day to day duties of finance personnel. It is important to have them at optimum as they are determining factors in financial performance of any business entity.

This theory is relevant to the study and its objectives in that it highlights the presence of current assets and current liabilities at a given time. The theory proposes two of measures of working capital to be adopted. Effective measure and management of working capital improves financial performance.

2.2.3 Keynesian Theory of Money

John Maynard Keynes (1935) brought to light in his publication of the General Theory of Employment, Interest and Money that concluded the three motives as to why an individual would hold money; Transaction motive, to meet day to day transactions that form the anchor of business operations; Precautionary Motive for security (payment of debts, liabilities and other insurgencies that could arise in the operations of the business; risk and risk management needs); speculation for market trends with an aim of increasing shareholders wealth at the least possible cost. The Keynesian theory is relevant to this study as it explains reasons why individuals or firms hold money.

In regards to this concept of the Keynesian theory would ensure the finance managers appreciate the need of keeping and maintaining appropriate and effective level working capital that maximizes financial performance of the organizations. The theory is relevant to the study as finance managers would maintain the right amount of cash to cater for the highlighted motives of holding cash. This can be achieved by maintaining the right mix of inventory, debtor and creditors.

2.3 Empirical Literature Review

2.3.1 Working capital Management and Financial performance

The policy of working capital is concerned with two sets of relationship among balance sheet items. To start with, the approach question about the level of aggregate current assets to be held. In spite of the fact that current assets differ with sales, it ought to be noticed that the proportion of current assets for sales turns into a strategic issue. An organization may hold moderately little amount of inventory in current

assets on the off chance that it chooses to adopt an aggressive strategy. Such move is to bring down the required level of speculation and upgrade the normal rate of return on assets. Hence, because of intemperate extreme credit strategy, such forceful arrangement should extend the likelihood of coming up short on inventories and money or deals misfortune (Gitman, 2015).

The connection between different types of assets and how they are financed is the second policy question. One arrangement demands for orchestrating resource and due obligations: financing short-term resources with short-term debt, and long term resources with long term obligation or capital. On the off chance that such strategy is actualized, the development arrangement of obligation is settled by considering current liabilities versus current resources. In the mean-time, short-term obligation is regularly more affordable to long term obligation. This infers the normal rate of return might be increasing if short-term obligation is utilized. By balancing the returns advantage demonstrates that tremendous extent of short-term liabilities enhances the following hazards: First, having to renew this debt at much higher interest rates and secondly not being able to renew the debt at all whenever the company goes through tough times. The two zones of working capital strategies involve hazard/return tradeoffs. Subsequently, the need to work-out a methodology to build up the most ideal levels of each kind of current assets to maintain, and the substitute techniques to back them is important. The technique of achieving these ideal conditions is the thing that might be named as working capital management. As pointed out by Shin and Soenen (1998) that Wal-Mart and K-Mart had similar capital arrangements in 1994, yet K-Mart's poor administration of working capital played a major part in the firm's going bankrupt. This is on the grounds that K-Mart had a cash conversion cycle of around 61 days while Wal-Mart had a shorter net conversion cycle of 40 days. K-Mart was faced with an additional $193.3 million every year financing costs emerging from longer duration of cash conversion cycle.

While featuring the roles of industrial practice on a firm's operation, Hawawini, Viallet, and Vora (1986) studied the impact of an organization's industry on its working capital management. They found out that there is a more noteworthy industrial result on organization's working capital management techniques which are steady after some time. Van Horne (2000) presented that working capital Management is a misnomer; if the working capital of the organization isn't overseen.

The term he focused on portrays an arrangement of administration choices that influence particular sorts of current assets and current liabilities. Ultimately, those choices ought to be established in the general valuation of the organization.

This findings and conclusion are consistent with those of Weston and Brigham (2003). Thus it strengthens their arguments that the idea of working capital management must do with those management decisions which border on balancing of risk/return tradeoffs for current asset holdings and the liabilities that create those assets. Weston et al at that point exhorted that working capital ought to be considered as a venture no less vital that gear and materials. They both contended that current assets exemplify the greater part the aggregate resources of a business, and when the going concern is moderately unstable, it deserves a cautious thought.

The same is contended that the level is much more so for the private company. The independent venture may bring down its interest in settled resources by leasing or renting plant and gear, yet it is highly unlikely it can stay away from an interest in real money, inventories and receivables. Further, since small and medium companies have relatively limited access to the long-term capital markets, it must necessarily rely heavily on trade credit and short- term bank loans, both of which affect net working capital by increasing current liabilities. (Van Horne 2000)

Studies covering the policy of working capital management have been carried out in Kenya. A study on Effects of working capital management on corporate financial performance was carried out by Mathuva, (2009). The study was carried out on a sampled 30 firms trading at the then Nairobi Stock Exchange (NSE) currently (Nairobi securities exchange) for the periods 1993 to 2008. The study used regression model and coefficient to analyze the secondary data collected from financial statements. The key discoveries of his examination were that: There exists a strong negative connection between Average receivables period and financial performance; there exists a profoundly positive connection between inventory conversion period, average payment period and financial performance.

Gul, Khan, Rehman, Khan, Khan and Khan (2013) investigated the influence of working capital management (WCM) on performance of small medium enterprises (SMEs) in Pakistan. The duration of the study was seven years from 2006 to 2012. The data used in this study was taken from Small and Medium Enterprises

Development Authority, Karachi Stock Exchange, tax offices, company itself and Bloom burgee business week. Independent variables were Number of Days Account Receivable (ACP), Number of Day's Inventory (INV), Cash Conversion Cycle (CCC) and Number of Days Account Payable (APP). In addition to these variables some other variables were used which included Firm Size (SIZE), Debit Ratio (DR) and Growth (GROWTH). Regression analysis was used to determine the relationship between WCM and performance of SMEs in Pakistan. Results suggested that APP, GROWTH and SIZE have positive association with Profitability whereas ACP, INV, CCC and DR have inverse relation with profitability and the findings were consistent with those of Muthuva (2009).

In his examination of the implications of a firm's working capital management practice on its profitability and dividend payout ratio, Oladipupo and Okafor (2013) focused on the extent of the effects of working capital management on the Profitability and Dividend Payout Ratio. Financial data were obtained from 12 manufacturing companies quoted on the Nigeria Stock Exchange over 5 years period (2002 to 2006). Using both the Pearson product moment correlation technique and ordinary least square regression technique, they observed that shorter net trade cycle and debt ratio promote high corporate profitability among the Nigerian manufacturing companies. While the level of leverage has negative significant impact on corporate profitability, the impacts of working capital management on corporate profitability appeared to be statistically insignificant at 5% confidence level. On the other hand, they observed that dividend payout ratio was influenced positively by profitability and net trade cycle but negatively by growth rate in earnings.

Almazari (2013) investigated the relationship between the working capital management (WCM) and the firms' profitability for the Saudi cement manufacturing companies. The sample included 8 Saudi cement manufacturing companies listed in the Saudi Stock Exchange for the period of 5 years from 2008-2012. The study used Pearson Bivariate correlation and regression models to establish the relationship between dependent and independent variables. The findings showed that as the size of a firm increases, profitability increased. Besides, when the debt financing increased, profitability declined. It was also found that the ratio of current assets to current liabilities was the most appropriate measure of liquidity affecting profitability. On this

premise the researcher suggested that business entities must set a trade-off between liquidity and profitability in order to realize optimum financial performance. Linear regression tests confirmed a high degree of association between the working capital management and profitability.

Akoto, Awunyo-Vitor and Angmor (2013) analyzed the relationship between working capital management practices and corporate financial performance. The study sampled listed 13 manufacturing firms in Ghana stock exchange. Using panel data methodology and regression analysis, the study found a significant negative relationship between financial performance and Accounts Receivable Days. However, in regards to the firms' Current Asset Turnover, Size, Current Asset Ratio and Cash Conversion Cycle had significant positive impact on corporate financial performance among the Ghanaian manufacturing firms. The study suggested that managers can increase shareholder's wealth by reducing their Average receivables periods to at least 30 days and further highlight the importance of incentives like discount which will help reduce the duration of Average receivables period. Ghanaian government policies can also play a role in financial performance of manufacturing firms in that the adoption of regulations and policies which protect local firms and cub the activities of importers are vital in promoting demand for locally manufactured goods.

Nyabwanga, Ojera, Lumumba, Odondo and Otieno (2012) assessed the effect of working capital management practices on the financial performance of Small Scale Enterprises (SSEs) in Kisii South District. A sample of 113 SSEs comprising 72 trading and 41 manufacturing enterprises was used. Pearson's correlation coefficients and multiple regression analysis techniques were used to analyze data. Consequently, the findings of the study were that, working capital management practices were low amongst SSEs as majority had not adopted formal working capital management routines and their financial performance was on a low average. The study also revealed that SSE financial performance was positively related to efficiency of cash management (ECM), efficiency of receivables management (ERM) and efficiency of inventory management (EIM).

Gakure, Cheluget, Onyango and Keraro (2012) analyzed the relationship between working capital management and performance of 15 manufacturing firms listed at the

Nairobi NSE from 2006 to 2010 financial year. They used secondary data from a sample of 18 companies at the NSE. The results indicated that there is a strong negative relationship between firm's performance and liquidity of the firm. Findings from the study concluded that average payment period, Average receivables period, and inventory conversion period had a negative correlation coefficient with profitability. Cash conversion cycle on the other hand had a positive association with financial performance which it was denoted by profitability. However, the effects of the independent variables except the average payment period were no statistically significant though the overall model was statistically significant.

Maradi, Salehi and Arianpoor (2012) compared working capital management of two groups of listed companies in Tehran Stock Exchange (TSE), which comprised of chemical industry and medicine industry. In chemical industry, 34 companies and medicine industry, 30 companies were selected and information related to these companies was gathered over 10 years (2001-2010) and analyzed using Ordinary Least Square multiple regression. The results show that, in medicine industry compared to chemical industry, debt ratio makes more impact on reduction of net liquidity. But examination of impact of Leverage over Working Capital Requirements indicate that, in chemical industry, debt ratio makes more impact on reduction of working capital requirements, compared to medicine industry.

Kimeli, (2012), analyzed the effects of working capital management on profitability of manufacturing companies listed at Nairobi securities exchange. The study sampled 6 companies over 5 financial years used diagnostic research design. Data obtained from financial reports was analyzed using regression models and to test the degree of association, correlation coefficient was used. From the study the researcher noted that operating profits have a strong positive correlation with Average receivables period and average payment period. The study denoted that a firm can increase shareholders wealth by delaying payments to suppliers and speeding up debt collection. Cash conversion cycle on the other hand was found to have a negative relation with profitability. By shortening the cash conversion cycle the firm can increase shareholders wealth.

Raheman, Afza, Qayyum and Bodla (2010) analyzed the impact of working capital management on firm's performance. The study targeted 240 listed manufacturing companies in Pakistan for the period 1998 to 2007financial years. For this purpose, balanced panel data of 240 manufacturing firms was used which are listed on Karachi Stock Exchange. The results indicated that the cash conversion cycle and inventory turnover have significant effects on the performance of the firms. They concluded that manufacturing firms were in general facing problems with their collection and payment policies. They study recommended that effective policies must be formulated for the individual components of working capital.

Influence of working capital management on corporate profitability, Mathuva (2010) concluded that that Average receivables period and profitability had a significant negative association with profitability. He explained that the more profitable firms take the shortest time to collect cash from the customers. Inventory conversion period and profitability were also found to have a significantly positive relationship. It was explained that firms, which maintain sufficiently high inventory levels reduce costs of possible interruptions in the production process and loss of business due to scarcity and products. The study also found out profitability and average payment period have significantly inverse relationship. He held that the longer a firm takes to pay its creditors, the more profitable it is. The study sampled 30 listed companies at Nairobi Securities exchange, analyzed data for periods 1993 to 2003 financial years. The study used fixed pooled OLS and fixed effects regression models to analyze the relationship between the dependent and independent variables.

Duale (2016), examined effect of working capital management decisions on financial Performance of small holder tea factories in Kenya. Data was collected from 66 small and medium enterprises. The study measured financial performance by return on equity. The study used secondary data from published statements of accounts, analyzed it using regression and correlation analysis, the study found that there is a significant relationship between working capital and financial performance. Inventory conversion period, cash conversion cycle and Average receivables period were found to have negative correlation with financial performance of tea factories in Kenya, while average payment period was found to have a positive correlation with financial performance of tea factories in Kenya.

Simidi (2015), carried out a study on effects of working capital management on financial performance of energy and petroleum companies listed in Nairobi Securities exchange. The study adopted quantitative research design and data collected from 5 energy petroleum companies over 8years between 2007 and 2014 financial years was analyzed using linear regression and correlation models to determine the degree of relationship between variables. Return on assets was used to measure financial performance. Findings from the study concluded that Return on asset and inventory conversion period, Average receivables period and cash conversion cycle was found to have a weak negative correlation. The study also found out that average payment period had a weak negative correlation with returns on assets, a finding which wasn't consistent with other studies like Duale (2016) who found out that there is a positive correlation between average payment period and financial performance. The research indicated that WCM influence the ROA significantly. 17.8% of the variations in profitability are influenced by variations in WCM. The study thus established that the influence of WCM on profitability is statistically significant.

Padachi (2006) analyzed the trends in working capital management and its impact on firm's performance. Findings from the study indicated that lower profitability was associated with high investment levels on inventories and high credit sales. This implied that the longer the time it takes to convert inventory to sales and collect the receivables, the lower the profits and vice versa. Profitability correlated positively with inventory conversion period and cash conversion cycle. On the other hand, account receivables days and account payables days correlated negatively with profitability. In another study, Dong and tyh tay-su (2010) documented a study to find out the relationship between working capital management and profitability. They considered gross operating profitability as a dependent variable and account receivable ratio in number of days, account payable ratio in number of days, inventory turnover ratio in number of days, and cash conversion cycle as independent variables. They found that there is a negative relationship between account receivable in number of days and inventory in number of days and profitability. The study further concluded that there is positive relationship between accounts payable and profitability of the sampled chemical medicine and companies listed at Tehran stock exchange.

The essentialness of working capital management productivity is unquestionable. Business achievement vigorously relies upon the capacity of finance personnel to successfully oversee receivables, stock, and payables (Filbeck and Krueger, 2005). Firms can diminish their financing expenses and raise the money accessible for extension projects by limiting the measure of venture tied up in current resources. Garcia-Teruel and Martinez-Solano (2007) used cross-sectional time series methodology to study 8,872 Small to medium-sized ventures (SMEs) from Spain on the impacts of working capital management on SME financial performance. The findings exhibited that management could increase share-holder's wealth by decreasing their inventories and the speed up collections from debtors.

Huge inventory and a liberal trade credit strategy may prompt high sales. Huge inventory diminishes the danger of a stock-out. Trade credit may fortify sales since it enables clients to survey item quality before paying (Deloof and Jegers, 1996). Another segment of working capital is creditor liabilities. Postponing installments to providers enables a firm to survey the nature of purchased items, and can be a modest and adaptable source of financing for the firm. Then again, late payment of creditors may be expensive in scenarios where there was discount for prompt payment.

A study on Effects of working capital management on corporate financial performance was carried out by Mathuva, (2009). The study was carried out on a sampled 30 firms trading at the then Nairobi Stock Exchange (NSE) currently (Nairobi securities exchange) for the periods 1993 to 2008. The study used regression model and coefficient to analyze the secondary data collected from financial statements. The key discoveries of his examination were that: There exists a strong negative connection between Average receivables period and financial performance; there exists a profoundly positive connection between inventory conversion period, average payment period and financial performance.

Rahman and Mohamed (2007) analyzed the impact of various individual components of working capital management on financial performance of Pakistan Firms. The study collected data relating to profitability so as to measure financial performance. The study used regression models to develop the relationship between these variables and concluded that as the cash conversion cycle builds, it prompts diminishing profits to the firm and management can increase shareholders wealth by decreasing the cash

conversion cycle to a conceivable least level. Falope and Ajilore (2009) used cross-sectional time series data methodology to study the effects of working capital management on financial performance of fifty Nigerian firms listed at Nigerian stock Exchange. The study concluded that there is a significant negative association between financial performances in this case was measured by profitability, and Average receivables period, inventory conversion period, average payment period and cash conversion cycle within the sampled listed Nigerian firms.

Mathuva (2009) established that there exists a highly significant positive relationship between the time it takes the firm to pay its creditors (average payment period) and profitability. In Christopher and Kamalevalli's (2011) study, the independent variables used were current ratio, quick ratio, inventory turnover ratio, working capital turnover ratio, debtor's turnover ratio, ratio of current asset to total asset, ratio of current asset to operating income, comprehensive liquidity index, net liquid balance size and leverage and growth while dependent variable (profitability) was measured in terms of return on investment (ROI). From multiple regression analysis, negative association with ROI was established in current ratio, cash turnover ratio, current asset to operating income and leverage. On the other hand, positive association with ROI is in quick ratio, debtor's turnover ratio, current asset to total asset and growth rate. In another study, Gameson (2007) analyzed impact of working capital management upon the performance of firms in Telecom industry. The variables used were, days sales outstanding, number of days for payment to vendors, average days inventory held, cash conversion efficiency, revenue to total assets, revenue to total sales, etc. Findings revealed negative & insignificant relationship between profitability and daily working capital requirement in the said industry.

Chemis (2015), studied the effects of working capital management on profitability. The study collected data from 8 sugar manufacturing firms in Kenya between 2008 and 2013 financial years. The researcher concluded that there is a significant negative relationship between working capital components and profitability and suggest that managers can increase shareholders wealth by effectively managing working capital. The study found out that there is a strong negative relationship between return on assets and cash conversion cycle, average payables period, average receivables period and inventory conversion period. Garcia-Teruel and Martinez-Solano (2007) likewise

settled that shortening the cash conversion cycle enhances financial performance as it increases profitability.

Shin and Soenen (1998) concluded that efficient and effectively managed Working Capital is crucial for creating an incentive for the investors. The way working capital is managed, significantly affects both financial performance and liquidity. Empirical findings from their study on effects of working capital management practices on financial performance drew a conclusion that financial performance and cash conversion cycle had an inverse relationship. Furthermore, shorter cash conversion cycle had a significant relation with adjusted risk return on capital. The study analyzed data using regression and coefficient models to study the connection between variables which were duration of cash conversion cycle, adjusted risk return on capital and corporate financial performance.

Net trading cycle/ Cash conversion cycle, is an imperative pointer of working capital management. The more extended this time slack, the bigger the interest in working capital. A longer net trading cycle may increase corporate financial position through increased profits as it leads to higher stock turnover. On the other hand corporate financial performance may be adversely affected with net trading cycle if the cost associated with investment in working capital rise faster than inventory handling costs, or allowing more credit sales to customers.

The connection between working capital management and financial performance has been carried out by Lazaridis and Tryfonidis (2006). The researcher sampled 131 trading companies in the Athens Stock Exchange. The study used gross operating profits to measure corporate financial performance. Data from 131 trading companies were collected studied and analyzed using multiple regression and correlation analysis for three years between 2001-2004 financial years. Findings from this study denoted that there was a significant relationship between corporate financial performances and net trading cycle. The study further suggested that managers could increase shareholders wealth by effectively managing net trading cycle and keeping each unique element of cash conversion cycle to an ideal level.

The conventional connection between working capital management strategies and a company's financial performance for a sampled 204 non-financial firms recorded on Karachi Stock Exchange (KSE) for the period 1998-2005 was conducted by Afza and

Nazir (2009). The investigation discovered critical distinction among their working capital necessities and financing approaches crosswise over various industries. In addition, regression model a technique used in data analysis, found a negative connection between the corporate financial performance and level strategy employed in working capital management and financing approaches. They recommended that supervisors could increase financial performance by adopting a conservative strategy in the management of working capital and working capital financing approaches.

The connection between working capital Management and financial performance of 88 American firms recorded on New York Stock Exchange was studied by Gill, Biger and Mathur (2010). The study used secondary data from financial statements over a period of 3 years from 2005 to 2007 financial years. Data collected was studied and analyzed by Pearson Bivariate Correlation Analysis and Weighted Least Squares (WLS) Regression procedures. The findings from the study denoted that there is a significant connection between cash conversion cycle and corporate financial performance. The study recommended that managers can increase financial performance by correctly managing cash conversion cycle while maintaining accounts receivables at ideal level

2.4 Research Gaps

Although studies on working capital management have been carried out by various scholars but not limiting to Oladipupo and Okafor (2013); Ahmad (2013); Akoto, Awunyo-Vitor and Angmor (2013); Kimeli .S.K (2012), Chemis (2015), Simidi 2015), Maradi, Salehi and Arianpoor (2012); Gakure, Cheluget, Onyango and Keraro (2012); Mathuva (2010); and Gill, Biger and Mathur (2010), it is eminent to note that there is still no clear measure regarding the appropriate variables as denoted by working capital management which might pose significant effects on financial performance. These studies do not provide distinctive conclusion of the relationship between working capital and firm's financial performance.

These studies donate that slowing down of accounts payables while speeding up accounts receivables and inventory turnover increases profitability and vice versa but they don't specify either reducing or increasing these periods by how many days. Further examination of these studies reveals that there was little of empirical evidence on the working capital management and its impact on the firm's financial

performance in case of automobile sectors of Kenya. Therefore, the present study was an attempt to fill this gap and estimates the relationship between working capital management variables (Average receivables period, Inventory Conversion Period, Average Payment Period and Cash Conversion Cycle) and corporate financial performance of listed automobile firms in Kenya.

2.5 Conceptual Framework

The study was anchored on the following conceptual framework.

Independent Variables   **Dependent Variable**

Average Collection Period

- 365 days * average receivables/ Credit sales

Inventory Conversion Period

- 356 days * Inventory/Cost of sales

Average Payables Period

- 365 days/ Total Supplier Purchase *Average Payables

Cash Conversion Cycle

- AR+ICP-AP

Corporate financial performance

- Return on Asset

- Political Environment
- Government policy
- Economic Environment

Intervening Variables

Figure 2.1 : Conceptual Framework

Source: Researcher's conceptualization (2017)

2.6 Operationalization of the Variables

Table 2. 1: Operationalization and Measurement of Study Variable

Category	Variable	Operationalization	Measurement
Dependent Variable	Corporate Financial performance	Return on assets. The profit generated by each sh. invested in assets	EBIT/Total Assets
Independent Variables	Average receivables period	The approximate amount of time taken for a business to receive payments owed from its customers.	365 days * average receivables/ Credit sales
	Average Payables Period	Measures the approximate number of days that a company takes to pay its suppliers	365 DAYS*AP /Total Supplier Purchase
	Inventory Conversion Period	Measures the length of time it takes a company to turn its inventory into sales	356 days * Inventory/Cost of sales
	Cash Conversion cycle	Measures the length of time it takes a company to convert resource inputs into cash flows.	C.C.C=AR+IT-AP

The independent variables are; Average receivables period as measured by the number of days it takes firms to collect their accounts receivables from their debtors, Inventory Conversion Period as measured by the number of days it takes for a firm to sell their stock either on cash or on credit, Average Payables Period as measured by the number of days it takes the firms to pay their debts as a result of credit purchase of inventory and Cash Conversion Cycle as measured by the number of days it takes to purchase inventory, selling them and receiving payments from the trade debtors. The dependent variable is firms' financial performance which was measured by Return on Assets. The intervening variables will affect the way the independent variable will affect the outcome of the dependent variable. During the period of study, the political environment, government policy and economic environment were the major factors as it will affect the financial performance of firms under the study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

The study adopted a quantitative approach which involved collection and analysis of numerical data. Using a correlation design, the researcher was able to investigate the effect of WCM on the corporate financial performance of the Automobile firms listed on NSE. Grimm and Yarnold (2000), opine that correlation design investigates a range of factors including the nature of relationships between two or more variables and the theoretical model that might be developed and tested to explain these resultant correlations. Correlational research attempts to determine the extent of a relationship between two or more variables using statistical data. In this type of design, relationships between and among a number of facts are sought and interpreted .Variables are not manipulated; they are only identified and are studied as they occur in a natural setting.

Correlation design was found to be ideal for this study since it was used to test the impact and relationship direction between WCM components and corporate financial performance of listed automobile firms. The researcher was therefore able to establish changes in one variable as a result of changes in the other variable. Duale (2016), Gakure, Cheluget, Onyango and Keraro (2012), Gill, Biger and Mathur (2010) used correlative analysis in their studies on the effect of WCM on performance. Therefore, this design was vital to the researcher as it was possible to compare the research findings with those from previous studies.

3.2 Target Population

The target population of the study comprised of all Automobile and accessories firms listed at the Nairobi Securities Exchange (NSE). These firms are Sameer Africa Limited, Marshall East Africa Limited and Car & General (Kenya) Limited. The researcher benefited from the ease of data collection from their financial statements as it is mandatory to have such information public. NSE has 3 active Automobile and Accessories companies as at 31st December 2016. The study adopted a census approach because of the small number (3) of listed firms under automobile and accessories sector at NSE. Christensen (2014), defined census as a count of all the elements in a population. According to (Saunders, Lewis &Thorn hill 2016) a census

approach enhances validity of the collected data by including certain information-rich cases for study. The total numbers of active automobile and accessories listed companies in the NSE used in the study are three.

3.3 Data Collection Procedure

The data for all the variables in the study was extracted from published annual financial reports and statements of the listed companies in the NSE covering the years 2007 to 2016. The data was obtained from the company websites and compared to those submitted to the NSE hand books, capital markets authority for the period of reference. The specific financial statements from which data were extracted included the income statement, statement of financial position/ balance sheet statements, and notes to the accounts.

3.4 Data Analysis Technique

The data obtained was analyzed using panel data regression models. Both random and fixed effects regression models were applied. To discriminate between random effects and fixed effects regression models, the study applied the Hausman test and based on the p value obtained, the researcher was in a position to reject or accept the null hypothesis. Thereafter the researcher carried out autocorrelation test between variables, tested for panel roots, tested for heteroskedasticity, tested for random effects and time fixed effects in the data to ensure regression model assumptions were not violated. Correlation analysis was also be used to test the hypothesis of the study. It was important in determination of degree of relationship between the independent and dependent variables. Descriptive statistics were used to summarize and profile the status of working capital management and corporate financial performance among automobile companies listed in the NSE and thereafter analyzed by use of Stata statistical analysis software, and presented in form of tables, and charts. To test the hypotheses of the study, the following model was used to analyze the relationship between the variables and test hypothesis direction by the regression model coefficient at 95% confidence level.

$$(ROA) = a + \beta_1 (ARP) + \beta_2 (ICP) + \beta_3 (APP) + \beta_4 (CCC)$$

Where:

a = Constant term for independent variables

$\beta 1$= Regression model coefficient for average receivables period

$\beta 2$= Regression model coefficient for Inventory conversion period

$\beta 3$= Regression model coefficient for average payables period

$\beta 4$= Regression model coefficient for cash conversion cycle

3.5 Ethical Issues

The study was conducted on ethical background. The researcher maintained and upheld high levels of objectivity in the entire process and acknowledge citations by previous authors where reference was made to past literature. The financial reports used in data analysis were and will be treated with utmost confidentiality and will be used solely for the purpose of the study. Data generated from the financial reports were analyzed on their natural setting of occurrence without alteration and falsifying of information. Upon completion the researcher intends to publish the findings so as to provide literature for future research on the topic and the suggested areas for further studies, and also to benefit the firms under study and policy regulators.

CHAPTER FOUR

DATA ANALYSIS PRESENTATION AND DISCUSSION

4.1 Introduction

This chapter shows findings of the study and discusses these findings after having carried out an in-depth analysis. The study targeted three Kenyan automobile firms listed at Nairobi securities exchange for a period of ten years from 2007 to 2016 financial years. Section 4.2 gives the descriptive statistics, section 4.3 and 4.4 provides the diagnostic statistics and inferential statistics while section 4.5 is the chapter summary.

4.2 Descriptive Statistics

Descriptive analysis shows the average, and standard deviation of the different variables of interest in the study. It also presents the minimum and maximum values of the variables which help in getting a picture about the maximum and minimum values a variable can achieve.

Table 4.1 gives descriptive statistics for 3 automobile companies listed at Nairobi securities exchange for a period of 10 years from 2007 to 2016 financial years and for a total 30 firms- year observations. The table shows that the average value of return on assets (ROA) is -0.65% and standard deviation is 20.68%. This figure means that return on assets can deviate from mean to both sides by 20.68%. The maximum and minimum values for the dependent variable (ROA) are 44.97% and -62.04% respectively, recorded by Marshall East Africa in 2011 and 2010 financial years.

The independent variables for the study comprised of average receivable period, inventory conversion period average payables period and cash conversion cycle. Data was measured in days and average receivable period had a mean of 90 days with a standard deviation of 29 days. This implied that on average a firm would collect money from debtors within a 90 day period and this figure would deviate by 29 more days. The variable also recorded a collection period of a maximum of 165 days by Marshall East Africa in 2012 which signified a weak credit collection policy in the organization and the shortest period being 52 days was recorded by the same company Marshall East Africa a year later in 2013 financial year. This implied there was a change in credit management policies which was reflected in the shortening of average collection period.

The firms recorded an average of 192 days of inventory conversion period. The figure also had a standard deviation of 67 days. This implied that the period would either increase or decrease by 67 days. It Marshall East Africa recorded the longest duration of 369 days in 2015 financial year and the shortest period of 119 days was recorded by Sameer Africa Limited in 2010 financial year.

The firms average payables period recorded the longest duration of 1532 days recorded by Marshall East Africa in 2015 financial year which was an indication of poor cash flow management. The shortest period was 18 days recorded by Sameer Africa Limited in 2010 financial year, increasing the likelihood that the company enjoyed trade discounts over the financial year. An average of 197 days with a standard deviation of 291 days was also observed within the listed automobile firms under study.

Concerning the duration of cash conversion cycle, the firms recorded an average of 83 days and a standard deviation of 257 days. This implied that on average it will take a firm a net of 83 days to convert its inventory to cash, pay the suppliers and also receive payments from debtors on an event where sales were on credit. From the data collected it was noted that the firms recorded the longest duration of 309 days in 2016 financial year, being exhibited by data collected from Sameer Africa limited. Marshall East Africa Limited recorded the least value of -1067 days in 2015 financial year. This is an indication of poor cash flow management as the company took the longest period in paying their suppliers something which might affect supplier relationship and loss of business trust.

The table below provides a summary of descriptive statistics on how the firms performed over the period of study.

Table 4.1: Descriptive Statistics

Variable	Observations	Mean	Standard Deviation	Min	Max
ARP	30	89.78767	28.1164	51.52	164.49
ICP	30	191.225	66.36214	118.63	368.73
APP	30	196.371	290.175	17.58	1531.56
CCC	30	82.93767	256.5509	-1063.6	308.56
ROA	30	-0.653	20.68439	-62.04	44.97

Source: Research Data (2017)

4.3 Inferential statistics

To analyze the effects of working capital management on corporate financial performance, the study carried out the following inferential statistics

4.3.1 Regression results

Regression analysis was carried out to establish if there exist any significant relationship between the dependent variable, return on assets and independent variables. The study used fixed effects and random effects model panel data regression models, thereafter Hausman test was conducted to choose between the two models and relevant diagnostics test were carried out before conclusion was made from the preferred model.

4.3.1.1 Fixed effects regression model

Table 4.2: Fixed effects regression model

Fixed-effects (within) regression				Number of obs	=	30
Group variable: firm				Number of groups	=	3
R-sq: within = 0.0184				Obs per group: min =		10
between = 0.9099				avg =		10.0
overall = 0.0213				max =		10
				$F(4,23)$	=	0.11
corr(u_i, Xb) = -0.5497				Prob > F	=	0.9785

roa	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
Arp	.0048688	.2089594	0.02	0.982	-.4273966	.4371343
icp	.0388083	.1473893	0.26	0.795	-.2660897	.3437063
app	-.0158217	.1467902	-0.11	0.915	-.3194804	.287837
ccc	-.0238453	.1429752	-0.17	0.869	-.319612	.2719214
_cons	-3.426683	20.90147	-0.16	0.871	-46.66468	39.81131

Sigma	_u	13.279361
sigma	_e	20.517383
rho	.29522875	(fraction of variance due to u_i)

F test that all u_i=0:   F(2, 23) =   2.24   Prob > F = 0.1297

Source: Research Data (2017)

The fixed effects model above shows that the combined effect of working capital management on return on assets is statistically insignificant within the automobile firms listed at NSE. The model's chi square value of 0.9785 is greater than 0.05, the value of R squared 0.0213 implies that independent variables have a combined effect on return on assets by 2.13 % while the other 97.97% was affected by other factors other than working capital management. It can therefore be concluded that the independent variables can't be used to predict the outcome of return on assets within the listed automobile firms. The errors ui are correlated with the regressors in the fixed effects model and from the model above they are correlated by -0.5497. The

model also reveals that 29.52% of the variance is due to differences across panels. 'rho' is known as the intra-class correlation. sigma_u represents standard deviation of residuals within groups ui and the variables exhibit a standard deviation of 13.279361 while sigma_e represents the standard deviation of residuals (overall error term) ei. The variables understudy exhibited a standard deviation of 20.517383. The t-values test the hypothesis that each coefficient is different from 0. To reject this, the t-value has to be higher than 1.96 (for a 95% confidence). If this is the case then the researcher can say that the variable has a significant influence on the dependent variable (y). The higher the t-value the higher the relevance of the variable, the variables however denoted t values less than 1.96. The researcher was therefore able to conclude that the relationship between the dependent and independent variables were insignificant at 95% confidence level from the fixed effects regression model.

From the above model average receivables period is positively related with return on assets. From the model, an increase in average receivables period by a day will result in an increase in return on assets by 0.048688 units keeping inventory conversion period, average payables period and cash conversion cycle constant. The relationship though is not statistically significant and it cannot be used to predict the outcome of return on assets. The relationship between inventory conversion period and return on assets is positively related. A day increase in inventory conversion period will result in an increase in return on assets by 0.0388083 units keeping other variables constant. This relationship is not statistically since the p value 0.795 is greater than 0.05. On the other hand, average payables period and cash conversion cycle reported inverse relationship with return on assets. A day increase in average payables period will result in a decrease in return on assets by 0.0158217 units keeping other factors constant, while a day increase in cash conversion cycle will also decrease return on assets by 0.0238453 units while other factors held constant.

4.3.1.2 Random Effects regression model

Table 4.3: Random effects regression model

Random-effects GLS regression					Number of obs	=	30
Group variable: firm					Number of groups	=	3
R-sq: within = 0.0026					Obs per group: min =		10
between = 0.9589					avg =		10.0
overall = 0.0680					max =		10
					Wald chi2(4)	=	1.82
corr(u_i, X) = 0 (assumed)					Prob > chi2	=	0.7683

roa	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
arp	-.027442	.2110022	-0.13	0.897	-.4409986	.3861147
icp	.0470954	.1540412	0.31	0.760	-.2548198	.3490106
app	-.088739	.1495597	-0.59	0.553	-.3818706	.2043925
ccc	-.0837702	.1466492	-0.57	0.568	-.3711974	.203657
_cons	17.17861	17.55762	0.98	0.328	-17.23369	51.59092

sigma_u	0					
sigma_e	20.517383					
rho	0 (fraction of variance due to u_i)					

Source Research Data (2017)

The random effects model above has also exhibited that the combined effect of working capital management on return on assets is statistically insignificant within the automobile firms listed at NSE. The model's chi square value of 0.7683 is greater than 0.05, the value of the model's overall R squared 0.0680 implies that independent variables have a combined effect on return on assets by 6.8 % while the other 93.2% was affected by other factors other than working capital management. It can therefore be strongly concluded that the independent variables can't be used to predict the outcome of return on assets within the listed automobile firms. Under this model the differences across units are uncorrelated with the regressors.

From the above model average receivables period is negatively related with return on assets. From the model, an increase in average receivables period by a day will result in a decrease of return on assets by 0.027442 units keeping inventory conversion period, average payables period and cash conversion cycle constant. The relationship though is not statistically significant and it cannot be used to predict the outcome of return on assets. The relationship between inventory conversion period and return on assets is positively related. A day increase in inventory conversion period will result in an increase in return on assets by 0.0470954 units keeping other variables constant. This relationship is not statistically significant since the p value 0.760 is greater than 0.05. Average payables period and cash conversion exhibited an inverse relationship with return on assets. A day increase in average payables period will decrease return on assets by 0.088739 units keeping other factors constant, while a day increase in cash conversion cycle will result in a decrease of return on assets by 0.0837702 units other factors held constant. The inverse relationship of both average payables period and cash conversion cycle are not statistically significant since the p value of 0.553 and 0.568 respectively are greater than 0.05.

4.3.2 Hausman Test

Estimating models from panel data requires a determination of whether a correlation exists between the unobservable heterogeneity of each firm and the independent variables within a model (fixed effects). This helps to ascertain whether a within-group estimator or a random effects estimator is more appropriate for the analysis (Garcia-Teruel & Martinez-Solano, 2007).

In order to determine the appropriate estimator for the short panel data used, a Hausman (1978) test (test for the null hypothesis of no correlation) was run on random effects regression estimation. The obtained statistically insignificant p-value of 0.3534 meant that the null hypothesis could not be rejected. Hence a random effects model (REM) was adopted as the best estimator for the panel data.

According to Raheman and Nasr (2007), a random effects model counters the problem of heteroskedasticity by calculating a common weighted intercept for all variables. These authors contend that the generalized least squares procedure normalizes the data by making the weighted residuals more comparable to the un-weighted residuals thereby providing a more consistent estimation.

Table 4.4: Hausman Test

	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	re	Difference	S.E.
arp	.0048688	-.027442	.0323108	.
icp	.0388083	.0470954	-.0082871	.
app	-.0158217	-.088739	.0729173	.
ccc	-.0238453	-.0837702	.0599249	.

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B) =   5.10

Prob>chi2 =   0.2771

(V_b-V_B is not positive definite)

Source: Research Data (2017)

In order to choose between fixed and random effects model for the model (ROA), the Hausman test was used. The null hypothesis of the Hausman test was that the random effects model was preferred to the fixed effects model. For ROA model, Hausman test reported a chi-square of 5.10 with a p-value of 0.2771 implying that at 5 percent level, the chi-square value obtained was statistically insignificant. The researcher therefore failed to reject the null hypothesis that random effects model was preferred to fixed effect model for ROA as recommended by Greene (2012).

4.4 Diagnostic Test Results

This section presents the results of the following diagnostic tests: time fixed effects test, test for random effects, test for cross sectional dependence, test of multicolleniarity, autocorrelation test, panel unit root test, and Hausman specification test.

4.4.1 Test for time fixed effects

Table 4.5: Test for time fixed effects

testparm arp icp app ccc roa
(1) arp = 0
(2) icp = 0
(3) app = 0
(4) ccc = 0
chi2(4) =   1.82
Prob > chi2 =   0.7683

Source: Research Data (2017)

The test results gave a p value of 0.7683 which is more than 0.05, so the researcher failed to reject the null that the coefficients for all years are jointly equal to zero, therefore no time fixed effects are needed in this case.

4.4.2 Test for Random effects

Having conducted Hausman test and confirmed that random effects was appropriate to fixed effects, the study conducted Lagraian multiplier test to decide between random effects regression and simple Ordinary Least Square regression. The study used Breusch and Pagan Lagrangian multiplier test for random effects. The null hypothesis is pooled estimation is appropriate.

Table 4.6: Breusch and Pagan Lagrangian multiplier test for random effects

roa[firm,t] = Xb + u[firm] + e[firm,t]

Estimated results:

	Var	sd = sqrt(Var)
roa	427.8442	20.68439
e	420.963	20.51738
u	0	0

Test: Var(u) = 0

chibar2(01) = 0.00

Prob > chibar2 = 1.0000

Source Research Data (2017)

Findings from the above test, the researcher was able to reject the null hypothesis that pooled estimation is appropriate, hence drew the conclusion that random effects was appropriate model. It is on this premise the researcher adopted random effects regression model.

4.4.3 Test of cross-sectional dependence

Table 4.7: Breusch-Pagan LM test of independence

Correlation matrix of residuals:

	__e1	__e2	__e3
__e1	1.0000		
__e2	0.0297	1.0000	
__e3	-0.1301	0.6249	1.0000

Breusch-Pagan LM test of independence: chi2(3) = 4.084, Pr = 0.2526

Based on 10 complete observations over panel units

Source Research Data (2017)

 The null hypothesis in the B-P/LM test of independence is that residuals across entities are not correlated. The findings above gave a p value of 0.2526 which is more

than 0.05. The researcher therefore failed to reject the null hypothesis and concluded that there was no cross sectional dependence from the analyzed set of data.

4.4.4 Test of heteroskedasticity

Modified Wald test was used to test heteroskedasticity in the panel data.

Modified Wald test for group-wise heteroskedasticity in fixed effect regression model

Table 4.8: Modified Wald test for group-wise heteroskedasticity

H0: sigma(i)^2 = sigma^2 for all I
chi2 (3) =   2704.06
Prob>chi2 =   0.0000

Source Research Data (2017)

The null hypothesis of this test was that the error variance was homoscedastic. From the test the p value is 0.000 which is less than 0.05. Therefore the researcher rejected the null hypothesis and signified the presence of   heteroskedasticity in the data set. The study also used Breusch-Pagan / Cook-Weisberg test for heteroskedasticity to confirm the presence of heteroskedasticity and presented the findings below.

Table 4.9: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of roalog
chi2(1)   =   3.72
Prob > chi2 = 0.0539

Source: Research Data (2017)

The study tested for panel level heteroskedasticity using the Breusch-Pagan / Cook-Weisberg as shown in table above. The null hypothesis of this test was that the error variance was homoscedastic. The Breusch-Pagan / Cook-Weisberg test produced a chi-square value of 3.72 with a p-value of 0.0539. The chi-square value was statistically significant at 1 percent level and hence the null hypothesis of constant variance was rejected to signify the existence of heteroskedasticity in the study data as

recommended by Poi and Wiggins (2001). The study consequently employed the Cross-sectional time-series Feasible Generalized Least Square regression estimation approach to take care of this problem.

4.4.5 Multicolleniarity test

Table 4.10: Multicolleniarity test

e(V)	Arp	Icp	app	Ccc	_cons
Arp	1.0000				
Icp	0.5288	1.0000			
App	-0.6760	-0.9016	1.0000		
Ccc	-0.6511	-0.8 814	0.9931	1.0000	
_cons	-0.3843	-0.1295	-0.1186	-0.1726	1.0000

Variable	VIF	1/VIF
App	118.08	0.008469
Ccc	88.74	0.011269
Icp	6.55	0.152638
Arp	2.21	0.453194
Mean VIF	53.89	

Source Research Data (2017)

As presented in table 4.3.3.5 the study used variance inflation factors and the findings were compared to those from the correlation matrix, to test for multicolleniarity. The results indicate that there were high levels of multicolleniarity between variables. Average payables period recorded the highest variance inflation factor of 118.08, cash conversion cycle recorded 88.74, while inventory conversion period recorded 6.55. Average receivables period recorded the least of 2.21 which implied that the variable didn't had multicolleniarity between other variables. Inventory conversion period had a weak or partial multicolleniarity while average payables period and cash conversion cycle recorded a strong evident of multicolleniarity. To avoid the problem of multicolleniarity between the dependent predictor variables, the study used cross sectional time series Feasible Generalized Least Squares regression to take care multicolleniarity among the variables.

4.4.6 Auto correlation test

Table 4.11: Durbin-waston d statistics

Number of gaps in sample 2

Durbin-Watson d statistics (5,   19) =0.6921326

Source Research Data (2017)

The study used the Durbin-Watson test for autocorrelation to test the presence of autocorrelation in the data and the results are presented in above table. The null hypothesis of this test was that there was no first order autocorrelation in the data. The test statistic reported was D test with 5 and n 19 degrees of freedom. The p-value of the D test was 0.6921326 implying the D test was statistically significant at 5 percent level. The results therefore indicate that there was no problem of first order autocorrelation in the data. The study also used Wooldridge test to test autocorrelation in panel data

Table 4.12: Wooldridge test for Autocorrelation

Wooldridge test for autocorrelation in panel data   .

H0: no first-order autocorrelation

   F(1,   2) =   0.005

       Prob > F =   0.9481

Source Research Data (2017)

From the above findings the null hypothesis of no first- order autocorrelation is accepted at 95 % confidence level. Subsequently, the researcher concluded that data set analyzed did not violate classical linear regression model assumption. The study used Cross-sectional time-series FGLS regression estimation approach as recommended by Swaminathan, Rogers, & Horner, (2014) to estimate the relationship between working capital management and corporate financial performance.

4.4.7 Panel unit root test

Panel unit root test was applied for all variables used in the analysis in order to avoid spurious regression results. The study applied Fisher-type test because it has more advantages than other panel unit root tests. The Fisher type unit root test requires specification of Dickey-Fuller to test whether a variable has unit root. The study therefore concluded that therefore concluded that average receivables period unit root and were therefore used in levels instead of its first difference. Return on assets, inventory conversion period, average payables period and cash conversion cycle had panel roots and they were used in their first difference. Only inventory conversion period was used in its second difference so as to eliminate panel roots. This means that the results obtained were not spurious (Gujarati, 2004).

4.5 Hypothesis Testing

The various diagnostic tests performed during the study revealed that return on assets, average receivables period, inventory conversion period, average payables period and cash conversion cycle did not have unit root thus the study ran them in levels. Further, the tests indicated that the data had multicorrelation and autocorrelation between predictor variables. Furthermore heteroskedasticity was evident from the data set thus the study estimated the models using cross sectional time series generalized least square estimation approach. The estimation results for the model are provided in the following table. To test the first hypothesis, the study adopted the null hypothesis Ho_1: There is no significant relationship between Average Collection period and corporate financial performance of automobile firms listed at NSE. The regression model adopted reported a p value of 0.887 which was greater than 0.05. The researcher therefore failed to reject the null hypothesis and concluded that there was no significant inverse relationship between average receivables period and corporate financial performance of automobile companies listed at NSE, at 95 % confidence level.

The second objective was analyzing the relationship between inventory conversion period and financial performance of automobile firms listed at NSE. The study used the null hypothesis below to test the level of significance in the relationship between

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the two variables.

Ho_2: There is no significant relationship between Inventory Conversion Period (ICP) and corporate financial performance of automobile firms listed at NSE. The p value from the regression model was 0.738 which was higher than 0.05. The researcher failed to reject the null hypothesis and concluded that there was no significant positive relationship between inventory conversion period and corporate financial performance among the automobile firms listed at NSE, at 95 % confidence level

The third objective of the study was to analyze the effect of average payables period on corporate financial performance of automobile companies listed at the NSE. The study adopted the null hypothesis, Ho_3: There is no significant relationship between Average Payment Period (APP) and corporate financial performance of automobile companies listed at the NSE. The p value from the regression model was 0.516 which was higher than 0.05. The researcher therefore failed to reject the null hypothesis and strongly concluded that there was no significant negative relationship between average payment period and corporate financial performance automobile firms listed in NSE, at 95 % confidence level.

The fourth objective was to establish the relationship between cash conversion cycle and corporate financial performance of automobile firms listed at NSE. The study adopted the null hypothesis Ho_4: There is no significant relationship between Cash Conversion Cycle (CCC) and corporate financial performance of automobile firms listed at NSE. The regression model exhibited a p value of 0.531, higher than 0.05. The researcher therefore failed to reject the null hypothesis and concluded that there was no significant inverse relationship between cash conversion cycle and corporate financial performance of automobile firms listed at the NSE, at 95% confidence level.

Table 4.13: Cross-sectional time-series FGLS regression

Cross-sectional time-series FGLS regression

Coefficients: generalized least squares

Panels: homoskedastic

Correlation: no autocorrelation

Estimated covariances = 1	Number of obs = 30
Estimated autocorrelations = 0	Number of groups = 3
Estimated coefficients = 5	Time periods = 10
	Wald chi2(4) = 2.19
Log likelihood = -131.8852	Prob > chi2 = 0.7013

roa	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Arp	-.027442	.1926178	-0.14	0.887	-.4049658	.3500819
Icp	.0470954	.1406197	0.33	0.738	-.2285142	.322705
App	-.088739	.1365287	-0.65	0.516	-.3563303	.1788522
Ccc	-.0837702	.1338718	-0.63	0.531	-.3461541	.1786137
Cons	17.17861	16.02784	1.07	0.284	-14.23538	48.59261

Source: Research Data (2017)

To estimate the relationship between working capital management and financial performance the study carried out the above diagnostic test and results presented above. Working capital management was measured by the average receivables period, inventory conversion period, average payables period and cash conversion cycle and

it formed the independent variable. The dependent variable was corporate financial performance and it was measured by return of assets ratio.

Average receivable period (ARP) portrayed a weak negative coefficient of -0.027442 and a p value of 0.887 at 95% confidence level. This implied that it is statistically insignificant relationship with return on assets (ROE). This finding signified that listed automobile firms in Kenya will slightly increase their return on assets if they reduce their average receivable period. These firms will have to adopt and maintain strict credit policies in order to speed up collections from debtors. This finding is consistent with prior studies conducted including those of Kimeli (2012), Duale (2016) Muthava (2009), Gul, Khan, Rehman, Khan, Khan and Khan (2013), Akoto, Awunyo-Vitor and Angmor (2013), Simidi (2015), Padachi (2006) and Rahman and Mohamed (2007) who emphasized on the importance of minimizing the firm's average receivable period in order to increase profitability a component used in measuring return on assets. Gakure, Cheluget, Onyango and Keraro (2012) found out that was statistically insignificant relationship between average receivables period and financial performance.

The relationship between duration of inventory conversion period (ICP) was found to have a weak positive correlation coefficient of 0.0470954 and a p value of 0.738 at 95 % confidence level. Statistically the findings implied that there is no significant relationship between inventory conversion period and return on asset. This was evident by the measure of p value at 95% confidence level, which was larger than p value 0.05. The positive correlation coefficient between the inventory conversion period (ICP) and corporate financial performance imply that firms that stock-up inventory for longer periods do not suffer from inventory scarcity and, hence, enhance their profitability. Automobile firms listed at the NSE can hold considerably more stock level in order to avoid scarcity and possibly suffer the loss attributed to low inventory levels. This finding is consistent with Mathuva (2010), Gul, Khan, Rehman, Khan, Khan and Khan (2013), Nyabwanga, Ojera, Lumumba, Odondo and Otieno (2012

However, the relationship between average payables period and corporate financial performance is a weak negative and insignificant at 95% confidence level, although it is very small. Data collected from automobile firms listed at Nairobi securities exchange reported a correlation coefficient between average payables period and corporate financial performance to be -0.088739 and a p value of 0.516. According to Brigham and Weston (2003), this relationship is expected to be positive since accounts payables are a source of short-term working capital financing and as such firms that delay paying their dues to suppliers put those funds into other short term investments and thus increasing firm profitability in the long run. However, Deloof (2003) justified the negative association between average payables period and corporate financial performance, arguing that it is profitability that influences payables deferral period such that the more profitable the firms are, the smaller should their payables deferral period and not the other way round. Though the negative relationship between average payables period and corporate financial performance was statistically insignificant, nevertheless, the empirical results from this study are consistent with the findings of Lazaridis and Tryfonidis (2006) and Raheman and Nasr (2007), Gakure, Cheluget, Onyango and Keraro (2012), and Simidi (2015). Oladipupo and Okafor (2013), also found out that there was insignificant negative relationship between average payables period and financial performance. As such, automobile firms listed at Nairobi securities exchange should reduce the number of days they take to pay up their creditors. This may likely benefit them in the form of cash discounts for early settlements of bills.

The relationship between cash conversion cycle and corporate financial performance was found to have a weak negative correlation coefficient of -0.0837702 and a p value of 0.738 at 95 % confidence level. Statistically the findings implied that there is no significant relationship between duration of cash conversion cycle and return on asset among listed automobile firms at Nairobi securities exchange. This was evident by the measure of p value at 95% confidence level. The negative correlation coefficient between the cash conversion cycle and corporate financial performance imply that firms shortening the cash conversion cycle results to increase in return on assets which is an indication of better financial performance while lengthening the period reduces return on assets. The empirical findings infer that reducing cash conversion cycle by a 0.0837702 results to an increase in profitability by a unit. Automobile firms

listed at the NSE can increase their returns on assets by shortening the cash conversion as to realize an increase in profitability. This finding is consistent with Mathuva (2010), Oladipupo and Okafor (2013) Kimeli (2012), Duale (2016), Akoto, Awunyo-Vitor and Angmor (2013), Simidi (2015), Shin and Soenen (1998) and Rahman and Mohamed (2007).

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

The main objective of this research was to establish the effects of working capital management on corporate financial performance of automobile and accessories companies listed at the NSE. The research sought to establish if the Accounts receivables Period, Inventory Conversion Period, Accounts Payable Period and Cash Conversion Cycle had any effects on corporate financial performance of automobile and accessories companies listed at the NSE. This chapter therefore presents the summary of the findings, conclusions, limitations as well as the recommendations.

5.1 Summary of Findings

The study sought to establish the combined effect of working capital management on the corporate financial performance of the automobile and accessories companies listed on the NSE. Linear regression was used to analyze the relationship between variables, out of which inferential statistics analysis was made for every variable. Cross sectional time series Feasible Generalized least square random effects was used to establish the combined effect of all independent variables (average collection period, inventory conversion period average payables period and cash conversion cycle) on the dependent variable (ROA). Data was collected from financial reports between 2007 and 2016 financial years. Diagnostic tests, were undertaken included autocorrelation test, test for heteroskedasticity, multicolleniarity test, panel root test and Housman effect test which established that the variables (ROA, ARP, ICP, APP and CCC) of the Automobile and accessories companies listed at NSE met the assumptions of feasible generalized least square regression models. Statistically, the researcher was therefore able to draw accurate and reliable conclusions about reality of the impact of working capital management on the corporate financial performance of automobile companies listed at NSE.

Findings from the collected data indicated that working capital management influence on financial performance was statistically insignificant. At 95 % confidence level, average receivables period, inventory conversion period, average payables period and cash conversion period had a combined p value of 0.7013. Though there were some element of correlation between the independent and dependent variables, none was

statistically significant at 95 % confidence level, it can be concluded that all variables average receivables period, inventory conversion period, average payables period and cash conversion cycle have a combined impact on Return on assets and therefore these independent variables can be used to predict ROA though the level of significance was very weak. The Cross-sectional time-series FGLS regression correlation coefficient between ROA and average receivables period was negative and weak. This means that if there is an increase in average receivables period then it will be associated with a reduction in the ROA and vice versa. The ROA and inventory conversion period reported a positive correlation. This means that if there is an increase in ICP, then such a scenario will be associated with an increase in the ROA and vice versa keeping other factors constant. However the linear correlation between these two variables exhibited a weak linear relationship.

The ROA and APP also have a negative correlation even though the linear relationship was weak. An increase in APP will be associated with a reduction in the ROA and vice versa with other factors held constant. Similarly, the ROA and CCC had a negative correlation even though the linear relationship was weak. If there is an increase in CCC, then there will be reduction in the ROA and vice versa keeping other factors constant. The CCC is the length of time between when the company makes payments of stock purchases to the period cash is received from the sales made. It is therefore a summation of ARP plus ICP less APP. The firms target is therefore to reduce the CCC in order to increase the ROA. Based on the p-values, average payables period is the most useful predictor of ROA followed by cash conversion cycle, inventory conversion period and lastly average receivables period.

The main objective of WCM is to minimize risks by ensuring seamless business operations and at the same time ensuring the business is in a better position to meet its short-term obligations. Incorrect evaluation of the liquidity implications of the firm's working capital needs may, in turn subject creditors and investors to an unanticipated risk of default (Fraser, L. M., & Ormiston, A, 2016). It is therefore requisite upon the Finance Managers of these Automobile and accessories companies listed at NSE to understand the business operations, and put in place robust WCM policy framework because of its potential impacts on the financial performance of the business.

5.2. Conclusions

Various diagnostic tests were carried on the variables (ROA, ARP, ICP, APP and CCC) of the Automobile and accessories companies listed at the NSE. Statistically, the researcher was therefore able to draw accurate and reliable conclusions about reality of the impact of WCM on the corporate financial performance of Automobile and accessories companies listed at NSE. The study has established that there is statistically insignificant relationship between working capital management and corporate financial performance for the Automobile and accessories companies listed at NSE. It can be concluded that all variables ICP, ACP, APP and CCC have a combined insignificant impact on ROA though these independent variables can be used to predict ROA.

It was concluded that ROA and ARP have a negative correlation even though the correlation was weak. This means that if there is an increase in ARP, then it will be associated with a resulting increase in the ROA and vice versa. Since the objective of the Automobile and accessories Companies is to increase the financial performance (ROA), it can therefore be concluded that Finance Managers of such companies will strive to shorten the duration average receivables period in order to increase the returns on assets. This can be achieved by use of incentives like discounts on prompt payments, tightening credit policy and encouraging cash sales where possible.

The empirical findings from the study further concluded that return on assets and inventory conversion period have a positive correlation though it was weak. This means that if there is an increase in inventory conversion period, then such a scenario will be associated with a corresponding increase in the return on assets and vice versa. Similarly it can be concluded that Finance Managers of such companies will strive to maximize the ICP by ensuring constant availability of stock to avoid scarcity or empty shelves in order to enhance the return on assets. Managers can adopt inventory management techniques which ensure there are constant levels of maintained inventory; at the same time ensure that inventory handling cost is well checked. This can be achieved through adoption of Economic Order Quantity model. It was also concluded that ROA and APP also have a negative correlation even though the linear relationship was weak. An increase in APP will be reduction in the ROA and vice

versa. It is therefore incumbent upon the Finance Managers of Automobile and accessories companies listed at NSE to minimize the APP in order to enhance the ROA. This enables the firms under study to benefit from trade and cash discounts associated with prompt payment of supplies. This move will also benefit the automobile firms in that, supplier relationship will be maintained. It was also concluded that ROA and CCC have a negative correlation even though the linear relationship is weak. If there is an increase in CCC, then there will be reduction in the ROA and vice versa. Finance Managers of these Automobile and accessories companies listed at NSE will have to focus on minimizing the CCC in order to enhance the ROA.

In relation to previous studies, it was concluded that the results of this study are similar to the findings earlier international studies particularly Deloof (2003), Lazaridis and Tryfonidis (2006) and Raheman and Nasr (2007) Falope and Ajilore (2009), Garcia and Martinez (2007), Gill, Biger and Mathur (2010), Gul, Khan, Rehman, Khan, Khan and Khan (2013), Shin and Soenen (1998) who have all researched on WCM and its impact on performance of companies. Locally, the study findings are similar to the conclusions arrived at by Gakure, Cheluget, Onyango and Keraro (2012), Mathura (2009), Akoto, Awunyo and Angmor (2013) Simidi (2015) who have also established that WCM impacts on the corporate financial performance of a firm.

5.3 Limitation of the study

The study was limited to WCM particularly average collection period, Inventory Conversion Period (ICP), Accounts Payable Period (APP) and Cash Conversion Cycle (CCC) and its effect on the corporate financial performance of Automobile and accessories Companies listed at the NSE. There are other factors such as capital structure, risk appetite, corporate governance, economic conditions, government regulations, and volatility of exchange rates which affects prices particularly for imports which could have an impact on the financial performance (ROA) of the Automobile and accessories Companies listed at the NSE but were not factored in during this study. Restriction to WCM components only was therefore limiting. The automobile and accessories sector in Kenya has over 70 companies. The major players in the industry include Toyota Kenya, Cooper Motor Corporation, General

Motors East Africa, Simba colt, DT Dobie, RMA motors and Beiben Trucks. This research was limited to only three companies listed at the Nairobi Securities Exchange (NSE). These companies are Sameer Africa, Car and General and Marshall East Africa. The sample of 3 companies was limiting and represents a small portion of the population of the Automobile and accessories companies on Kenya.

A Cross-sectional time-series Feasible Generalized Least Square regression was used to analyze the effects of working capital management on the corporate financial performance of Automobile and accessories companies listed at the NSE. The financial performance was measured by the Return on Assets (ROA). There are other measures of financial performance such as Gross Profit (GP), Net Profit (NP), Return on Equity (ROE), Earning Per Share (EPS) among others that were not used in this study. The use of ROA was therefore limiting.

5.4. Recommendations

In overall, the research has indicated that there exist a relationship between WCM and corporate financial performance ROA though it was statistically insignificant at 95% confidence level. The following recommendation can be made regarding the effective WCM of Automobile and accessories companies listed on the NSE in order to enhance the financial performance (ROA).

Practice of Corporate Financial management: Financial Managers should review specific policies regarding each component of WCM since they have a combined relationship with corporate financial performance of Automobile and accessories companies. On credit policy, Finance Managers should encourage credit sales to boost corporate financial performance but at the same time minimize the risk of bad debts. Credit terms should be clearly spelled out in a credit Policy. Customer should be vetted for credit qualification before extending credit facilities to the customer. Credit control department should be established, adequately manned and provided with budgetary resources to ensure timely collection of receivables from customers. Optimal average receivables Period (ARP) should be set as a performance target for the Financial Managers.

The Finance Managers should have a documented Inventory Management Policy. This should guide the effective inventory management practices. Inventory Management techniques such as Economic Order Quantities should be deployed to

ensure optimal level of inventory. Financial Managers should also adopt technology for effective inventory management practices. Vetting and prequalification of inventory suppliers will ensure product quality, timely delivery of inventory to meet sales orders.

The Finance Managers should ensure an Accounts Payable Policy is in place. The policy should stipulate the target Accounts payable Period (APP) which should be embedded in the performance targets for the Finance Managers. Strained relationship with suppliers due to late or non-payment of suppliers will negatively affect the ability of Automobile and accessories companies to maintain optimal inventories. Weekly and or monthly cash flow projections practices should be encouraged to ensure suppliers are paid on time. Monthly ageing of payable reports should be reviewed by Finance Managers to ensure Accounts Payable Policies are being complied with.

Regulators: The Professional competence for the Finance Managers should be monitored regularly. The Institute of Certified Public Accountant of Kenya (ICPAK) should ensure Financial Managers meet Continuous Professional Education (CPE) requirements as a means to ensure professional financial management practices are embedded in the management of Automobile and accessories companies listed at the NSE.

5.5. Suggestions for Further Research

The study was limited to few components of WCM particularly Accounts Receivables Period (ARP), Inventory Conversion Period (ICP), Accounts Payable Period (APP) and Cash Conversion Cycle (CCC). There are other factors such as capital structure, risk appetite, corporate governance, economic conditions, government regulations, and volatility of exchange rates which could have an impact on the financial performance (ROA) of the Automobile and accessories Companies listed at the NSE. These factors could form a basis for future research.

The study was also limited to three Automobile and accessories companies listed at the NSE. The sample of three companies therefore represents a small portion of the population of the Automobile and accessories companies in Kenya. The automobile sector in Kenya has over 70 motor vehicle assemblers, distributors and motor vehicle accessories and supplies companies. The entire population could form the basis of future research that can focus on all Automobile and accessories companies in Kenya.

Conclusions of the study were drawn from estimates from cross-sectional time-series Feasible Generalized Least Square regression which was used to establish the effects of WCM on the financial performance of Automobile and accessories companies listed at the NSE. Financial performance was measured by the Return on Assets (ROA). Companies can also measure financial performance using other measures such as Gross Profit (GP), Net Profit (NP), Return on Equity (ROE), Earning Per Share (EPS) among others. The use of ROA was therefore limiting. This can therefore form the basis of future research which can focus on other measure of financial performance beside Return on Assets.

The study collected data over a period of ten years. There is need to extend the time frame of the study beyond ten years as it might provide more clarity on how working capital management impacts corporate financial performance

Future studies should consider how strategic decisions of the firm interact with decisions on working capital management to influence organizational performance. Working capital management decisions are undertaken at the tactical and operational level, and it would be interesting to establish whether their effectiveness in helping the firm attain particular objectives depends on the decisions made at the strategic level.

The study further suggest that other components affecting financial performance, like capital structure, should be done on the same companies as it was established what might be the cause of poor financial performance among the listed automobile and accessories companies .It would be of interest to ascertain which factors are affecting financial performance within the firms.

REFERENCES

Abuzayed, H. (2012) Working capital management and firms' performance in emerging markets: the case of Jordan. *International Journal of Managerial Finance, 2*(3), 251-271.

Afza, T., & Nazir, M. (2009). Impact of aggressive working capital management policy on firms' profitability. *The IUP Journal of Applied Finance*, 15(8), 20-30.

Akoto, K. et. al (2013). Working capital management and profitability: Evidence from Ghanaian listed manufacturing firms. *Journal of Economics and International Finance, 5*(9), 373-379

Almazari, A. (2014). The Relationship between Working Capital Management and Profitability: Evidence from Saudi Cement Companies. *British Journal of Economics, Management & Trade,* 4(1), 146-157. doi:10.9734/bjemt/2014/5427

Blinder, S., & Maccini, J. (2001). *The resurgence of inventory research: what have we learned?* Cambridge Education Centre: Cambridge.

Blinder, S. and Maccini, .J. (2001). The resurgence of inventory research: what have we learned, *Journal of Economic Survey*, 5(1):291-328.

Brennan , Maksimovic, V, & Zechner, J. (2003). Capital Structure, Information Acquisition and Investment Decisions in an Industry Framework. *Review of Finance, 2*(3), 251-271.

Chemis, P. K. (2015). Effects Of Working Capital Management On Profitability Of Sugar Manufacturing Firms In Kenya. *International Journal of Commerce and Management, 24*(2), 18-31.

Christensen, L. (2014). *Research Methods*. Harlow: Pearson Education Limited.

Deloof, M. & Jegers, M. (1996). Trade credit, product Quality, and Intra Group Trade: Some European Evidence, *Financial Management,* 25(3), 33-43

Duale, M. (2016). *Effect of Working Capital Management Decisions on Financial Performance of Small Holder Tea Factories In Kenya*

Eljelly, A. M. (2004). Liquidity-profitability tradeoff: An Empirical Investigation in an Emerging Market. *International Journal of Commerce and Management, 14*(2), 8-61.

Filbeck, G., & Krueger, T. (2005). Industry related differences in working capital management. *Journal of Business, 20*(2), 11-18.

Fraser, L. M., & Ormiston, A. (2016). *Understanding financial statements*. Boston: Pearson.

Gakure, R. Cheluget, K.J. Onyango, J.A, & Keraro (2012) *Working capital management and profitability of manufacturing firms listed at the Nairobi stock exchange*

Garcia-Teruel PJ, Martinez-Solano PM, (2007). Effects of working capital management on SME profitability. *International Journal of Managerial Finance,* 3: 164-177.

Garcia-Teruel, P.J. & Martinez-Solano P.M. (2007). Effects of working capital management on SME profitability. *International Journal of Managerial Finance*, 3, 164-177.

Gill, A., Biger, N., & Mathur, N. (2010). The relationship between working capital management and profitability: Evidence from the United States. *Business and Economics Journal,* 13 (4) 23-57.

Gitman, J., & Zutter, C. J. (2015). *Principles of managerial finance global edition*. Boston: Pearson.

Greene, H. (2012). *Econometric analysis*. Boston, MA: Pearson.

Greene, W.H. (2012). *Econometric Analysis* (7th ed.). Pearson Publishers.: Prentice Hall

Grimm, L. G., & Yarnold, P. R. (2000). *Reading and understanding multivariate statistics*. Washington, D.C.: American Psychological Association.

Grimm, L. G., & Yarnold, P. R. (2000). *Reading and understanding more multivariate statistics*. Washington (DC): American Psychological Association.

Gujarati, D. N. (2004). *Basic econometrics*. New Delhi: Tata McGraw-Hill.

Gul, S., Khan, M. B., Raheman, S.U., Khan, M.T., Khan, M., & Khan, W. (2013). Working capital management and performance of SME sector. *European Journal of Business and management,*

Hawawini, G., Viallet, D & Vora, A. (1986). Industry influence on corporation working capital Decisions. *Sloan Management Review,* 27: 15-24

Hirschey, M., & Bentzen, E. (2016). *Managerial economics*. Andover, Hampshire, United Kingdom: Cengage Learning EMEA

Jain, N. K. (2014). *Working capital management*. New Delhi: A.P.H. Pub. Corp.

Kenya Motor Industry (KMI). (2012). *Brief: Vehicle Ages*. Retrieved from KMI: http://www.kmi.co.ke/

Kenya Motor Industry (KMI). (2016). *Production and Sales Data*.

Kenya National Bureau of Statistics (KNBS). (2017). *Economic Survey*.

Kenya National Bureau of Statistics (KNBS). (2016). *Leading Economic Indicators.*

Keynes J. M. (1935). *The General Theory of Employment, Interest and Money*, Harcourt, Brace and Company, New York.

Khan, M. Y., & Jain, P. K. (2007). *Financial management*. New Delhi: Tata McGraw-Hill

Kimeli, S. K. (2012). *Analysis Of Effects Of Working Capital Management On Profitability Of Manufacturing Companies: A Case Study Of Listed Manufacturing Companies On Nairobi Securities Exchange*.

Lazaridis, I. & Tryfonidis, D. (2006). Relationship between working capital management and profitability of listed companies in Athens stock Exchange. *A Journal of Financial Management and Analysis*, 19(1) 26-35.

Manaseh, P. (2001). Business finance-Working capital Management. 2nd Edition

Maradi, M., Salehi, M., & Arianpoor, A. (2012). A comparison of working capital management of chemical and medicine listed companies in Tehran Stock Exchange

Mathuva, D. (2009). The influence of working capital management components on corporate profitability: a survey on Kenyan listed firms. *Research Journal of Business Management, 3*(8), 23-51

Mathuva, M. (2010). The Influence of Working Capital Management Components on Corporate Profitability: A Survey on Kenyan Listed Firms. *Research Journal of Business Management, 4*(1), 1-11. doi:10.3923/rjbm.2010.1.11

McLaney, E. J. (2017). *Business finance: theory and practice*. Harlow, England: Pearson.

Mwaura J (2013). The effect of financial planning on the financial performance of automobile firms in Kenya

Nickel, S., Stein, O., & Waldmann, K. (2014). *Operations Research*. Berlin: Springer Berlin

Nyabwanga, N., Ojera, P., Lumumba, M., Odondo, J., & Otieno, S. (2012). Effect of working capital management practices on financial performance: A study of small scale enterprises in Kisii South District, Kenya

Oladipupo, A.O., & Okafor, C.A. (2013). Relative contribution of working capital management to corporate profitability and dividend payout ratio: Evidence from Nigeria

Padachi, K. (2006). Trends in working capital management and its impact on firms performance. An analysis of Mauritanian small firms. *International review of business research papers* 2(2). 45-58

Pandey, I. M. (2015). *Financial management*. New Delhi: Vikas Publishing House PVT LTD

Peirson, G., Brown, R., Easton, S. A., Pinder, S., & Howard, P. (2015). *Business finance*. North Ryde, N.S.W.: McGraw-Hill Education.

Raheman, A. and Nasr, M. (2007). Working capital management and profitability – Case of Pakistani firms. International Review of Business Research Papers, Vol. 3, No 1, pp. 279-300

Richards, V. D., & Laughlin, E. J. (1980). A Cash Conversion Cycle Approach to Liquidity Analysis. *Financial Management, 9*(1), 32. doi:10.2307/3665310

Saunders, M. N., Lewis, P., & Thornhill, A. (2016). *Research methods for business students*. Harlow, Essex, England: Pearson Education Limited.

Scott, D., & Morrison, M. (2005). *Key ideas in educational research*. London: Continuum

Shin, H. H., & Soenen, L. (1998). Efficiency of working capital management and corporate profitability. *Financial Practice and Education, 8*(2), 37-45.

Simidi, P. M. (2015). *Effects Of Working Capital Management On Financial Performance Of Energy And Petroleum Companies Listed At Nairobi Securities Exchange*

Stokes, P., & Wall, T. (2014). *Research methods*. London: Palgrave

Swaminathan H Rogers J, H & Horner, Robert. (2014). An effect size measure and Bayesian analysis of single-case designs. Journal of school psychology. 52. 213-230.

Tulsian, P. C., & Pandey, V. (2012). *Quantitative techniques: theory & problems*. New Delhi: Pearson Education.

Van Horne, J.C & Wachowicz, J. M., (1997-2000). Fundamentals of financial management Eleventh edition. Prentice Hall Inc

Weston, J. F., & Brigham, E. F. (2003). *Canadian managerial finance*. Toronto: Dryden.

Wood, F., & Sangster, A. (2012). *Business accounting*. Harlow, Essex: Financial Times Prentice Hall/Pearson.

APPENDICES

APPENDIX I: Automobile firms Listed at NSE

1. Car and General
2. Sameer Africa
3. Marshall East Africa

Source: Nairobi Securities Exchange 2017

APPENDIX II: Individual Company Variables for the Study Period

Firm Name: Marshall East Africa

YEAR	ARP (days)	ICP (days)	APP (days)	CCC (days)	ROA (%)
2016	63.53	343.2	142.60	179.18	-6.73
2015	141.94	368.73	1531.56	-1063.6	-7.11
2014	102.83	159.69	620.77	-329.52	-0.83
2013	51.52	189.94	371.07	-104.38	-37.35
2012	164.49	206.82	457.75	-124.78	-42.16
2011	85.30	261.91	429.07	-126.12	44.97
2010	66.89	159.62	172.54	9.24	-62.04
2009	162.34	278.77	232.1	168.96	-14.55
2008	116.00	185.31	187.98	113.33	-24.56
2007	106.00	229.31	241.89	69.91	16.67

Firm Name: Car & General Limited

YEAR	ARP (days)	ICP (days)	APP (days)	CCC (days)	ROA (%)
2016	68.61	149.78	94.66	123.73	1.61
2015	72.37	130.01	106.75	95.63	0.95
2014	88.43	144.01	110.68	121.76	5.58
2013	74.67	148.12	113.12	109.67	7.28
2012	64.36	174.56	114.28	124.64	6.29
2011	58.92	144.96	92.59	110.46	9.07
2010	75.43	150.89	84.06	132.69	12.95
2009	58.92	133.58	67.43	125.08	9.37
2008	75.43	156.55	114.25	117.73	13.42
2007	67.98	177.32	114.64	130.66	14.82

Firm Name: Sameer Africa Limited

YEAR	ARP (days)	ICP (days)	APP (days)	CCC (days)	ROA (%)
2016	90.73	343.2	125.38	308.56	-26.29
2015	75.08	233.48	77.02	231.54	0.15
2014	90.98	194.39	62.23	223.15	-1.8
2013	90.25	156.82	30.04	217.03	12.44
2012	112.25	131.74	53.14	190.86	8.79
2011	99.34	138.63	28.98	208.99	4.75
2010	91.61	118.63	17.58	192.66	2.19
2009	79.90	171.44	34.76	216.59	11.14
2008	103.44	178.02	38.89	242.57	13.51
2007	94.09	177.32	23.32	248.08	7.88

APPENDIX III: Research Authorization Letter

SCHOOL OF BUSINESS & ECONOMICS

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3th November, 2017

To Whom It May Concern:

Dear Sir/Madam,

RE: MOSES KIGEN CHEBOROR– GMB/NE/1081/09/12

This is to confirm that the above named is a bonafide student of Kabarak University pursuing a Master of Business Administration (Finance Option).

Moses has completed his coursework and currently carrying out a study on *"The Effects of Working Capital Management on Corporate Financial Performance: A survey of Automobile and Accessories Companies Listed at Nairobi Securities Exchange.*

Your assistance will be highly appreciated.

Thank you.

Yours faithfully,-

DR. JOHN GATHII
DEAN SCHOOL OF BUSINESS AND ECONOMICS
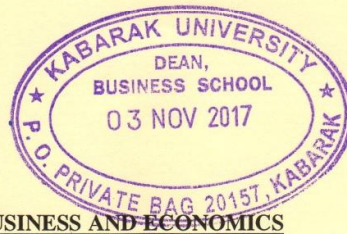
Kabarak University Moral Code
As members of Kabarak University family, we purpose at all times and all places, to set apart in one's heart, Jesus as Lord.
(1 Peter 3:15)