

**THE RELATIONSHIP BETWEEN WORKING CAPITAL MANAGEMENT AND  
PROFITABILITY OF RETAIL SUPERMARKET CHAINS IN KENYA**

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## **DECLARATION**

This management research project is my own original work and has not been submitted for a degree in any other university.

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## **SUPERVISOR'S DECLARATION**

This research project has been submitted for examination with my approval as the candidate's University Supervisor.

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## **DEDICATION**

This study is dedicated to my loving family, for their support, encouragement and patience during the entire period of my study and continued prayers towards successful completion of this course. May God bless you all.

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I thank Almighty God for his guidance and providence which enabled me to undertake this project that was too involving in terms of time and resources.

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## ABSTRACT

The relationship between working capital variables and profitability has disclosed both negative and positive association. Empirical results show that accounts receivables period and leverage significantly and negatively affect profitability. The negative relationship between accounts receivable period and profitability may be due to customers wanting more time to get quality goods from a firm with declining profitability. Some empirical findings conflict financial models explaining trade credit, trade credit are more profitable short term investments than marketable securities it is therefore rational for high profit firms that are more liquid, to transfer relatively high amounts of trade credit to the buyers, in accordance to liquidity theory, liquid firms are less likely to demand trade credit and are likely to offer credit. Firms may have an optimal level of working capital that maximizes their value. Large inventory and a generous trade credit policy may lead to high sales. Larger inventory reduces the risk of a stock-out. Trade credit may stimulate sales because it allows customers to assess product quality before paying.

The purpose of this study was to establish the relationship between Working Capital Management and Profitability of retail supermarket chains in Kenya. The research was a causal study design. The population of this study consisted of the 6 retail supermarket chains in Kenya these are Nakumatt, Tusksys, Uchumi, Ukwala, Naivas, and Eastmatt. The research used data of the selected retail chains, the data was collected covered a five year period starting from 2005 to 2009. The research used secondary data that was obtained from financial statements of the companies and multiple regression analysis was employed.

The study found that there exist a relationship between Working Capital Management and Profitability of retail supermarket chains in Kenya. It was also established that

The study recommends that for supermarkets to remain profitable they should have working capital management which will help in making decisions about investment mix and policy, matching investments to objectives, asset allocation for institutions, and balancing risk against profitability. Working capital management techniques in supermarkets should focus more on strategic issues for profitability and the ability to achieve strategic objectives. Average Collection Period was found to have a weak non-significant negative relationship with NOP, average payment period was found to have a non-significant negative relationship with NOP, CCC has a weak but significant positive relationship with NOP and Debt ratio was found to have a non-significant positive relationship with NOP.

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## CHAPTER ONE

### 1.0 INTRODUCTION

#### 1.1 Background

Profitability is the primary goal of all business ventures. Without profitability the business will not survive in the long run, a business that is highly profitable has the ability to reward its owners with a large return on their investment. So measuring current and past profitability and projecting future profitability is very important. Profitability is measured with income and expenses. Income is money generated from the activities of the business. For example, if crops and livestock are produced and sold, income is generated. However, money coming into the business from activities like borrowing money does not create income. This is simply a cash transaction between the business and the lender to generate cash for operating the business or buying assets, (Edwards 2004).

Profitability ratios are used to measure the company's ability to generate a return on its resources. An increase in the ratios is viewed as a positive trend. Profitability measures include Net Operating Profitability (NOP) defined as Operating Income plus depreciation, and divided by total assets minus financial assets. Gross profit margin indicates how well the company can generate a return at the gross profit level, it addresses three areas inventory control, pricing and production efficiency, Net profit margin shows how much net profit is derived from every dollar of total sales. It indicates how well the business has managed its operating expenses. It also can indicate whether the business is generating enough sales volume to cover minimum fixed costs and still leave an acceptable profit, Return on Assets this evaluates how effectively the company employs its assets to generate a return. It measures efficiency. Return on Equity this is also called return on investment (ROI). It determines the rate of return on the invested capital. It is used to compare investment in the company against other investment opportunities, such as stocks, real estate, savings, etc. There should be a direct relationship between ROI and risk (i.e., the greater the risk, the higher the return) Lee and Zumwal (1981). In this study the measure of profitability will be Net Operating Profitability (NOP)

Working Capital management refers to choosing the levels and mix of cash, marketable securities, receivables, inventories and short term financing. According to (Pandey 2008), there

are two concepts of working capital namely; gross working capital which refers to the firm's investment in assets and net working capital which refers to the difference between current assets and current liabilities. The gross working capital concept focuses attention on how to optimize investment in current assets and how current assets should be financed. The consideration of the level of investment should avoid either excessive or inadequate investment in such assets. Excessive investment should be avoided because it impairs the firm's profitability. On the other hand, inadequate amount of working capital may expose the firm to insolvency. Whenever a need for working capital arises due to the increasing level of business activity or for any other reason, financing arrangement should be made quickly. Similarly, if suddenly some surplus funds arise, such should be invested in short term securities.

Net working capital or NWC, is a financial metric which represents operating liquidity available to a business. Along with fixed assets such as plant and equipment, working capital is considered a part of operating capital. It is calculated as current assets minus current liabilities. If current assets are less than current liabilities, an entity has a working capital deficiency, also called a working capital deficit. It indicates the liquidity position of the firm and suggests the extent to which working capital needs may be financed by permanent sources of funds. Current assets should be sufficiently in excess of current liabilities to constitute a buffer for maturing obligations within the ordinary operating cycle of a business.

Ramachandran & Janakiraman (2009) define working capital as the flow of ready funds necessary for the working of a concern. It comprises funds invested in current assets, which in the ordinary course of business can be turned into cash within a short period without undergoing diminishing in value and without disruption of the organization.

According to Raheman & Nasr (2007) working capital management is a very important component of corporate finance because it directly affects the liquidity and profitability of a company. It deals with current assets and current liabilities. Working capital management is important due to many reasons. For one thing, the current assets of a typical manufacturing firm accounts for over half of its total assets. For a distribution company, they account for even more. Excessive levels of current assets can easily result in a firm's realizing a substandard return on investment. However firms with too few current assets may incur shortages and difficulties in maintaining smooth operations. Efficient working capital management involves planning and controlling current assets and current liabilities in a manner that eliminates the risk of inability to

meet due short term obligations on the one hand and avoid excessive investment in these assets on the other hand.

Yadav and Kamath (2009), in their study of Maharashtra's bulk drugs listed companies defines working capital management as the financing, investment, and control of net current assets within the policy guidelines. The management of working capital involves managing inventories, accounts receivable and payable, and cash. Working capital may be regarded as lifeblood of the business and its effective provision can do much to ensure the success of the business, while its inefficient management can lead to the downfall of the enterprise. It involves the relationship between a firm's short-term assets and its short-term liabilities. The goal of working capital management is to ensure that a firm is able to continue its operations and that it has sufficient ability to satisfy both maturing short-term debt and upcoming operational expenses.

Working capital management is a very important component of corporate finance because it directly affects the liquidity and profitability of the company. It deals with current assets and current liabilities. Working capital management is important due to many reasons. For one thing, the current assets of a typical manufacturing firm accounts for over half of its total assets. For a distribution company, they account for even more. Excessive levels of current assets can easily result in a firm's realizing a substandard return on investment. However firms with too few current assets may incur shortages and difficulties in maintaining smooth operations (Horne and Wachowicz, 2000). Efficient working capital management involves planning and controlling current assets and current liabilities in a manner that eliminates the risk of inability to meet due short term obligations on the one hand and avoid excessive investment in these assets on the other hand (Eljelly,2004). Many surveys have indicated that managers spend considerable time on day-to-day problems that involve working capital decisions. One reason for this is that current assets are short-lived investments that are continually being converted into other asset types (Rao1989). With regard to current liabilities, the firm is responsible for paying these obligations on a timely basis. Liquidity for the ongoing firm is not reliant on the liquidation value of its assets, but rather on the operating cash flows generated by those assets (Soenen, 1993). Taken together, decisions on the level of different working capital components become frequent, repetitive, and time consuming. Working Capital Management is a very sensitive area in the field of financial management (Joshi, 1995). It involves the decision of the amount and composition of

current assets and the financing of these assets. Current assets include all those assets that in the normal course of business return to the form of cash within a short period of time, ordinarily within a year and such temporary investment as may be readily converted into cash upon need. The Working Capital Management of a firm in part affects its profitability.

Retail Industry, one of the fastest changing and vibrant industries in the world, has contributed to the economic growth of many countries. The term 'retail' is derived from the French word retailer which means 'to cut a piece off or to break bulk'. In simple terms, it implies a first-hand transaction with the customer. Retailing can be defined as the buying and selling of goods and services. It can also be defined as the timely delivery of goods and services demanded by consumers at prices that are competitive and affordable. Retailing involves a direct interface with the customer and the coordination of business activities from end to end- right from the concept or design stage of a product or offering, to its delivery and post-delivery service to the customer. The industry has contributed to the economic growth of many countries and is undoubtedly one of the fastest changing and dynamic industries in the world today. The significant types of retail operations consist of department store, specialty store, discount/Mass Merchandisers, warehouse/Wholesale clubs and factory outlet.

Retailing, one of the largest sectors in the global economy, is going through a transition phase in India but the world over, Kamau (2008).

The traditional grocers, by introducing self-service formats as well as value-added services such as credit and home delivery, have tried to redefine themselves. However, the boom in retailing has been confined primarily to the urban markets in the country. Even there, large chunks are yet to feel the impact of organised retailing. There are two primary reasons for this. First, the modern retailer is yet to feel the saturation' effect in the urban market and has, therefore, probably not looked at the other markets as seriously. Second, the modern retailing trend, despite its cost-effectiveness, has come to be identified with lifestyles.

Kenya is a comparatively affluent market in East Africa and is likely to experience faster growth in the modern retail sector as the economy continues its upward trend. Even though the retail sector is dominated by traditional retail channels and independent supermarkets in the countryside, the development of modern grocery chains has taken root in urban areas, David et al (2006). Domestic players such as Nakumatt are beginning to open stores in smaller towns

outside the capital city Nairobi other players in the industry include Tusksys, Naivas, Ukwala, Uchumi and Eastmatt.

Retail development has benefited from the fact that in recent years, the Kenyan government has made considerable headway in terms of making the business environment in Kenya more attractive for investors. According to a World Bank survey (World Bank 2008), which calculates the relative ease of doing business in 178 countries, Kenya was ranked in 72nd place, 10 positions higher than in 2007. Whilst ease of credit has significantly improved the business environment for investors, other factors such as an improved infrastructure, reduced corruption and political stability have all fuelled growth across the sectors.

## **1.2 Statement of the Problem**

The relationship between working capital variables and profitability has disclosed both negative and positive association. Empirical results show that accounts receivables period and leverage significantly and negatively affect profitability. (Samiloglu & Demirgunes 2008) showed that cash conversion cycle, size and fixed financial assets have no statistical significance effects on profitability of Turkish manufacturing firms. The negative relationship between accounts receivable period and profitability may be due to customers wanting more time to get quality goods from a firm with declining profitability. Some empirical findings conflict financial models explaining trade credit, trade credit are more profitable short term investments than marketable securities (Emery, 1984) it is therefore rational for high profit firms that are more liquid, to transfer relatively high amounts of trade credit to the buyers, in accordance to liquidity theory, liquid firms are less likely to demand trade credit and are likely to offer credit. Firms may have an optimal level of working capital that maximizes their value. Large inventory and a generous trade credit policy may lead to high sales. Larger inventory reduces the risk of a stock-out. Trade credit may stimulate sales because it allows customers to assess product quality before paying (Long, Maltiz and Ravid, 1993, and Deloof and Jegers, 1996).

Shin and Sonen (1998) in a study American manufacturing firms for the period 1974-1995 analysed a statistically negative relationship between cash conversion cycle and profitability. Lazaridis and Tryfonidis (2006) discussed possible relationship between cash conversion cycle

by dividing cash conversion cycle into its components and concluded that increases in all the periods affects profitability negatively. Eljelly (2004) concluded that the effect of cash conversion cycle on profitability is stronger than the effect of current ratio on profitability.

In Kenya studies have been done on working capital management and profitability Bett (2009) did a study on working capital management practices and profitability in Kenyan referral hospitals, he identified that there are policies that are not adhered to leading to poor performance of the institutions. Mogere (2003) did a survey of working capital management among microfinance institutions in Nairobi, his objective was to determine the effect of amount of long-term financing of current assets on profitability of companies. Nganga (2009) did a study on the relationship between working capital management and profitability of listed companies in the Nairobi stock exchange, he found out that accounts receivables period and leverage significantly and negatively affect profitability, while the increase in accounts receivables period also increases sales which in return increases profitability, these results are contradicting, it shows working capital increasing and also negatively affecting profitability.

Firstly though there are many studies on working capital and most of them have been done in countries developed economies, proper working capital management is particularly important in developing countries like Kenya where firms have their major investments in current assets and use shorter loans as a source of finance and in the case of retail supermarkets in Kenya where they buy in bulk on credit and sell in cash and loans are mainly short term because most of the assets are leased, it will be important to find out the relationship between working capital management and profitability for these industry and also in developing countries both human and financial resources are limited, the conclusion arrived at on the relationship between working capital and profitability may not be the same as for developed countries. Secondly most of the studies done yielded mixed results for example the study by Nganga (2009) on the accounts receivable period negatively affecting profitability while at the same time, increase in accounts receivable period increases sales that increase profitability and thus it would be important to assess if the study to be undertaken will produce conclusive results. Thirdly most of the studies reviewed were on manufacturing firms and listed companies Nganga (2009) for studies done in Kenya industries, the study will be interested to assess if the relationship arrived at on previous studies would hold for a retail supermarket chain which are also private companies.

### **1.3 Objective of the study**

The objective of the study was to establish the relationship between Working Capital Management and Profitability of retail supermarket chains in Kenya.

### **1.4 Importance of the study**

#### **To supermarkets**

The study will provide information to the supermarkets chains on how their working capital management affect their profitability and this will assist them in checking if the policies they have adapted are the appropriate to maximise profit.

#### **To regulatory bodies and government**

The research findings shall aid in the improvement of the already formulated policies of full disclosure and enforcement of the same in order to facilitate full implementation and in conformity with International Financial Standards that the country is in the process of adopting.

#### **To Academia**

The research will provide valuable information regarding working capital management in the Supermarkets. Little has been done on retail industry and in particular supermarkets in Kenya the research will seek to collect information on working capital management of retail industry which can be used by students of financial management.



## CHAPTER TWO

### 2.0 LITERATURE REVIEW

#### 2.1 Introduction

This chapter contains a brief description of profitability and working capital management, it also contains information on composition of working capital, factors affecting composition of working capital and factors affecting working capital management, measures to improve working capital, working capital policy, approaches employed in working capital management, theoretical framework of working capital management which includes liquidity and profitability, models of working capital management that is Baumol Model, The Miller- Orr Model, Value Network Theory and empirical studies on working capital management and profitability.

#### 2.2 Profitability

Economists and accountants differ on the proper definition of profit. To the accountant, profit is the excess of revenues over expenses and taxes and is best measured by earnings. To the economist, earnings fails to include an important expense item, the opportunity cost of the equity capital contributed by the shareholders of the firm. A firm earns economic profits only to the extent that its earnings exceed the returns it might earn on other investments. Thus, earnings will always exceed economic profits, and a firm can be profitable in an accounting sense yet unprofitable in an economic sense. This conceptual difference has important practical implications. If managers attempt to maximize earnings (or growth of earnings) rather than economic profit, they will invest additional units of equity capital so long as the marginal contribution to earnings is positive. But if they do so, the marginal contribution of the last unit of equity capital will be zero and less than its opportunity cost, and the average return to equity capital may be greater or less than its opportunity cost depending upon how much equity is used. In contrast, a manager who maximizes economic profits will add units of equity capital only until the marginal contribution of capital is equal to its opportunity cost, and the average return to equity capital will equal or exceed its opportunity cost. As a result, firms that make business decisions without explicitly incorporating the opportunity cost of equity will be inefficient users of equity capital, engaging in investment projects that generate low returns to shareholders.<sup>2</sup> In 1995, a year of robust earnings, one study estimated that fewer than half of the 1,000 largest

industrial and nonfinancial firms earned sufficient returns to cover their opportunity cost of capital ( Ross 1997). Banks and other companies have begun to address this issue by incorporating an explicit opportunity cost of equity into their decision processes. In particular, a number of banks have incorporated a measure of economic profit in three key areas: strategic decision-making, product pricing, and performance evaluation and incentive compensation.

### **2.3 Origin of Working Capital Management**

The term working capital originated with the old Yankee peddler, who would load his wagon with goods and then go off on his route to peddle his wares. The merchandise was called working capital because it was what he actually sold, or ‘turned over’, to produce profits. The wagon and the horse were his fixed assets. He generally owned the horse and the wagon, so they were financed with ‘equity’ capital, but he borrowed the funds to buy merchandise. These borrowings were called working capital loans, and they had to be repaid after each trip to demonstrate to the bank that the credit was sound. If the peddler was able to repay the loan, then the bank would make another loan, and the banks that followed this procedure were said to be employing “sound banking practices”

As noted above, the concept of working capital management originated with the old Yankee peddler, who would borrow to buy inventory, sell the inventory to pay off bank loan, and then repeat the cycle. The concept has been applied to more complex businesses, where it is used to analyze the effectiveness of a firm’s working capital management (Brigham & Houston, 2007)

During the great depression of 1930s in the United States, there was a scramble for liquidity. The public claimed their deposits from banks and the banks in turn reduced their lines of credit. This forced inventory liquidations to occur as prices declined significantly. Firms reported huge losses and could not attain sufficient funds to meet their obligations. The study of working capital and liquidity gained prominence during this period (Guthmann, 2006).

Historically working capital management has passed through control, optimization and value measurement stages (Weinraub and Visscher 1998). Working capital management originally started as a systematic approach of controlling the incoming, outgoing and remaining balances of cash, receivables and inventories. At this stage the main objective is that working capital is not misappropriated for personal benefits of those who are entrusted with its management. Practitioners developed various control measures over the receipts and collections of cash,

receipts and issuance of inventories as well as the increase of receivables through credit sales and decrease of receivables through cash collection. Under the optimality management phase, the main focus was on the physical safety of working capital items and on the minimization of related costs and maximization of related income. At this stage particular models were developed to ensure that firms do not get problems due to a lack of liquidity or incur too many costs by holding excesses of working capital levels (Smith 1974). Under the control and optimality approaches the amount of accounting profit is taken as a main measure of managerial efficiency.

## **2.4 Composition of Working Capital**

The elements which normally make up the figure of working capital are: Current liabilities; trade creditors, creditors for expenses, bank overdraft, bank loans, bonuses payable, interest on members' savings and members' savings, and other short term liabilities. Current assets; cash in hand and bank, stock of goods, trade debtors, staff advances and loans, marketable securities, prepayments and loans to members

In many companies, the amount of funds committed to current assets can and often exceed that of fixed assets. Decisions relating to working capital and short term financing involve managing the relationship between a firm's short term assets and its short term liabilities. The goal of working capital management is to ensure that the firm is able to continue its operations and that it has sufficient cash flow to satisfy both maturing short term debt and upcoming operational expenses. A business can fail because of lack of cash than for want of profit. If a business is operating profitably, then it should generate cash surpluses. If it does not generate cash surpluses, then the business may eventually run out of cash and close down. Also businesses can go bankrupt even when they are making profits owing to working capital mismanagement, Pandey (2008).

## **2.5 Factors Affecting the Composition of Working Capital**

Pandey (2008) identified the following as factors affecting composition of working capital

### **2.5.1 Nature of Business**

Different companies operating in different industries have different working capital requirements. A purely trading organization will basically have finished goods inventory,

accounts receivable and cash as current assets and accounts payable as current liability. On the other hand, capital goods manufacturing and trading companies will have a high proportion of current assets in the form of inventory of raw materials and work-in-progress. Thus, the nature of business is directly linked to the requirement of working capital, Pandey (2008).

### **2.5.2 Nature of Raw Material Used**

The nature of raw material used in the manufacture of finished goods greatly influences the quantum of raw material inventory. For example, if the raw material is an agricultural product whose availability is pronouncedly seasonal in character, the proportion of raw material inventory to finished goods inventory will be quite high. Similarly companies using imported raw materials with long lead time tend to have a high proportion of raw material inventory. In the case of capital goods manufacturing company the demand for whose product is growing over time, the tendency will be to have high inventory of raw material and components, Pandey (2008).

### **2.5.3 Process Technology Used**

In case the raw material has to go through several stages during the process of production, the work-in-progress inventory is likely to be much higher than any other item of the current assets thereby increasing the need of working capital, Pandey (2008).

### **2.5.4 Nature of Finished Goods**

The nature of finished goods greatly affects the amount of finished goods inventory. For example, if the finished goods have a short span of 'shelf-life' as in the case of cigarettes the finished goods inventory will constitute a very low percentage of current assets. In the case of companies the demand for whose finished goods is seasonal in nature, as in the case of fans, the inventory of finished goods will constitute a high percentage of total current assets. This is mainly because from the point of view of the fixed costs to be incurred by the company it would be more economical to maintain an optimum level of production throughout the year than by stepping up production operations during the busy season, Pandey (2008).

### **2.5.5 Degree of Competition in the Market**

When the degree of competition in the market for finished goods in an industry is high, then companies belonging to the industry may have to resort to an increased credit period to its customers, partially lowering credit standards and similar other practices to push their products. These practices are likely to result in a high proportion for accounts receivables thereby increasing the need for working capital, Pandey (2008).

### **2.5.6 Growth and Expansion**

As the company grows, it is logical to expect that a larger amount of working capital is required. It is, of course, difficult to determine precisely the relationship between the growth in volume of business of a company and the increase in the working capital. The composition of working capital also shifts with economic circumstances and corporate practices. Other things being equal, growth industries require more working capital than those that are static. The critical fact however, is that the need for increased working capital funds does not follow the growth in business activities but precedes it. Advance planning of working capital, is therefore a continuing necessity for a growing concern, Pandey (2008).

## **2.6 Factors Affecting Working Capital Management**

According to Pandey (2008), organizations are more focused on cash and supply chain issues. On the other hand, external issues like legal environment or internal matters like organizational structure and information system can significantly influence working capital. Due to market pressure, companies are misled to paying a lot of attention on presenting good quarterly results month after month. Undue focus on this issue may sometimes lead to flattering but inaccurate picture of working capital performance.

## **2.7 Measures to Improve Working Capital**

Proper cash flow forecasting is the main issue of effective working capital management. This should take into account the impact of unforeseen events, market cycles, loss of customers and

strategies taken by competitors. The effect of unforeseen demands on working capital should be factored in.

There are certain advantages of working capital on a corporate basis. Cash generated at one location can be well used at another. For this to happen effectively, good linkages between production and billing, internal flow of cash and sound treasury practices should be in place. Executives at the highest levels should rightly set the target and performance levels. This is necessary and will help in identifying and implementing strategies generating short-term cash.

Dispute management system in a company should be effective especially in relation to customers. This is needed in freeing up cash otherwise locked due to disputes. It will also improve customer relation and free up legitimate activities like sales and cash collection.

So, working capital is an important tool to measure a company's operational and financial efficiency. This aspect must be incorporated in the company's strategic and operational thinking. Efforts should always be made to improve company's working capital, which in the long run, would grow into a better customer relationship, Pandey (2008).

## **2.8 Working Capital Policy**

Working capital policy refers to the firm's policies regarding: target levels for each category of current operating assets and liabilities, and how current assets will be financed. Generally good working capital policy (i.e. under conditions of certainty) is considered to be one in which holdings of cash, securities, inventories, fixed assets, and accounts payables are minimized. The level of accounts receivables should be used as a means of stimulating sales and other income. Previous literature on working capital management has found a negative association, overall, between level of working capital and operating performance as measured by operating returns and operating margins (Peterson and Rajan, 1997). Under conditions of certainty (i.e. sales, costs, lead times, payment periods, and so on, are known), firms have little reason to hold more working capital than a minimum level. Larger amounts would increase the level of operating assets, increase the need for external funding, resulting in lower return on assets and a lower return on equity, without any increase in profit.

However the picture changes when uncertainty (i.e. uncertain growth) is introduced (Brigham and Houston, 2007). Larger amounts of cash, securities, accounts receivables, marketable securities, inventories, and fixed assets will be needed to support increased sales. Required levels

will be based on expected sales levels and expected order lead times. Additional holdings may be needed to enable the firm to deal with departures from the expected values. Further, firms will also attempt to increase their accounts payable balances as a means of financing increased levels of current operating assets. Firms which are in high growth stages will face the challenge of maintaining the necessary level of operating assets to support subsequent growth, while at the same time attempting to maintain adequate performance indicators.

## **2.9 Approaches Employed in Working Capital Management**

The manner in which the permanent and temporary current assets are financed is called the firm's current asset financing policy. There are three approaches (Brigham & Houston, 2007): Maturity Matching or 'Self Liquidating' Approach. This is where risk is hedged by matching maturities of assets and liabilities. Permanent current assets are financed with long term financing, while temporary current assets are financed with short term financing. Two factors prevent this exact matching there is uncertainty about the lives of assets, and some common equity must be used, and common equity has no maturity.

Conservative Approach uses long term funds to finance both permanent as well as some temporary short term assets. When they are excess funds, they are invested in marketable securities.

Thirdly is the Aggressive Approach, which uses less long term and more short term financing than the Conservative Approach. This is where a firm finances all its fixed assets with long term capital and part of its permanent current assets with short term, non-spontaneous credit.

## **2.10 Liquidity**

The quantum of investment in current assets has to be made in a manner that it not only meets the needs of the forecasted sales but also provides a built in cushion in the form of safety stocks to meet unforeseen contingencies arising out of factors such as delays in arrival of raw material, sudden spurts in demand etc. Consequently, the investment in current assets for a given level of forecasted sales will be higher if the management follows a conservative attitude than when it follows an aggressive attitude. Thus, a company following a conservative approach is subject to a lower degree of risk than the one following an aggressive approach. Further, in the former situation the high amount of investment in current assets imparts greater liquidity to the company

than under the latter situation wherein the quantum of investment in current asset is less. This aspect exclusively covers the liquidity dimension of working capital, (Brigham and Houston 2007).

### **2.11 Profitability**

The total amount of financial resources at the disposal of a company is limited and these can be put to alternative uses, the larger the amount of investment in current assets, the smaller will be the amount available for investment in other profitable avenues at hand with the company. A conservative approach in respect of investment in current assets leaves fewer amounts for other investments than an aggressive approach does. Further, since the current assets will be more for a given level of sales forecast under the conservative approach, the turnover of current assets (calculated as ratio of net sales to current assets) will be less than what they would be under the aggressive approach. Even if we assume the same level of sales revenue, operating profit before interest and tax and net (operating) fixed assets, the company following a conservative policy will have a low percentage of operating profitability as compared to its counterpart following an aggressive approach,(Brigham and Houston 2007).

### **2.12 Review of Theories**

Several theories have been put forward on the working capital management and profitability, three theories that this study has reviewed are the Baumol model, The Miller-orr Model and the network theory.

#### **2.12.1 Baumol Model**

Baumol Model (Baumol 1952) of cash management provides a formal approach for determining a firm's optimum cash balance under certainty. It considers cash management similar to an inventory management problem. As such, firms attempt to minimize the cost of holding cash and the cost of converting marketable securities to cash. This model makes the following assumption: the firm is able to forecast its cash needs with certainty; the firm's cash payments occur uniformly over a period of time; the opportunity cost of holding cash is known and it does not change over time; and the firm will incur the same transaction cost whenever it converts securities to cash.



The firm incurs a holding cost for keeping the cash balance. It is an opportunity cost; that is, the return foregone on the marketable securities. If the opportunity cost is  $k$ , then the firm's holding cost for maintaining an average cash balance is as follows:

$$\text{Holding cost} = k(C / 2)$$

The firm incurs a trading cost whenever it converts its marketable securities to cash. Total number of transactions during the year will be total funds requirement,  $T$ , divided by the cash balance,  $C$ , i.e.,  $T/C$ . The per transaction cost is assumed to be constant. If per transaction cost is  $c$ , then the total trading cost will be:

$$\text{Trading Cost} = c(T / C)$$

The total annual cost of the demand for cash will be:

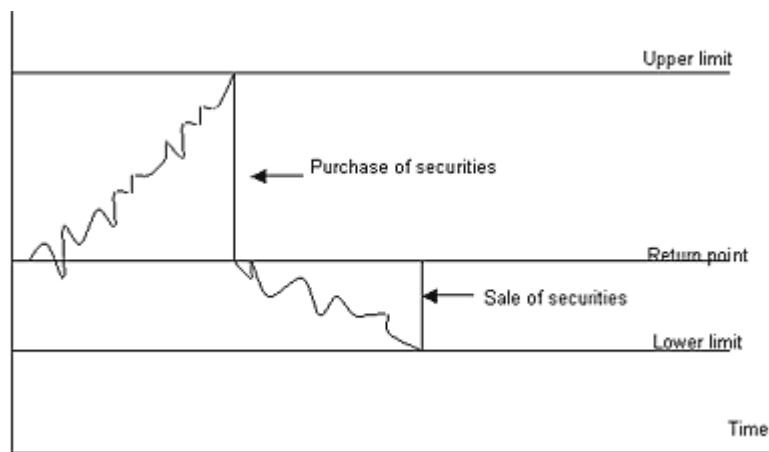
$$\text{Total cost} = k(C / 2) + c(T / C)$$

The optimum cash balance,  $C^*$ , is obtained when the total cost is minimum. The formula for the optimum cash balance is as follows:

$$C^* = \sqrt{\frac{2cT}{k}}$$

### 2.12.2 The Miller- Orr Model

A limitation of the Baumol model is that it does not allow cash flows to fluctuate. Firms in practice do not use their cash balance uniformly nor are they able to predict daily cash inflows and outflows. The Miller-Orr model (Miller and Orr 1966) overcomes this shortcoming and allows for daily cash flow variation. It assumes that net cash flows are normally distributed with a zero value of mean and standard deviation. The model provides for two control limits- the upper control limit and the lower control limit as well as a return point. If the firm's cash flows fluctuate randomly and hit the upper limit, then it buys sufficient marketable securities to come back to a normal level of cash balance. Similarly, when the firm's cash flows go below the lower limit, it sells sufficient marketable securities to bring the cash balance back to the marketable level as shown in the diagram below:



Determining the distance between upper and lower control limits (called  $Z$ ) is as follows: The difference between the upper limit and the lower limit depends on the following factors: the transaction cost ( $c$ ); the interest rate, ( $i$ ); and the standard deviation ( $s$ ) of net cash flows. The formula for determining the distance between upper and lower control limits (called  $Z$ ) is as follows:

$$\text{Upper Limit} = \text{Lower Limit} + 3Z$$

$$\text{Return Point} = \text{Lower Limit} + Z$$

The net effect is that the firms hold the average cash balance equal to:

$$\text{Average Cash Balance} = \text{Lower Limit} + \frac{4}{3} Z$$

### 2.12.3 Value Network Theory

Rappaport (1986) theory on shareholders' value network is adapted because it explains the linkages between the corporate objectives of value creation and its value drivers. He argues that to be effective, management must be guided by a set of principles that can be applied in decision making in various situations. To this effect, he also developed a number of financial management approaches and basic principles applicable for the management of working capital. Two of the most important of these principles are the objective of the shareholders value creation and the cash flow approach to decision making. The objective of the shareholder is value creation according to Rappaport because owners of the firms hire managers to act in order to maximise their wealth by generating profit. Therefore the criterion of shareholder value creation becomes a basic approach to formulate and evaluate firm objectives. Value drivers are the variables that create value and are taken as the building block by which firms create a product valuable to

buyers. Rappaport's shareholder value network depicts the essential link between the corporate objective and the basic drivers –sales growth rate, operating profit margin, income tax rate, working capital investment, fixed capital investment, cost of capital and value growth duration. Value composition cash flow from operations and the discount rate are the factors used to measure the achievement of the corporate objective firm.

### **2.13 Empirical Studies**

Many researchers have studied financial ratios as a part of working capital management; however, very few of them have discussed the working capital policies in specific. Some earlier work by Gupta (1969) and Gupta and Huefner (1972) examined the differences in financial ratio averages between industries. The conclusion of both the studies was that differences do exist in mean profitability, activity, leverage and liquidity ratios amongst industry groups. Johnson (1970) extended this work by finding cross-sectional stability of ratio groupings for both retailers and primary manufacturers. Pinches et al. (1973) used factor analysis to develop seven classifications of ratios, and found that the classifications were stable over the 1951-1969 time periods.

Chu et al. (1991) analyzed the hospital sectors to observe the differences of financial ratios groups between hospital sectors and industrial firms sectors. Their study concluded that financial ratios groups were significantly different from those of industrial firms' ratios as well these ratios were relatively stable over the five years period. Sathyamoorthi (2002) focused on good corporate governance and in turn effective management of business assets. He observed that more emphasis is given to investment in fixed assets both in management area and research.

However, effective management working capital has been receiving little attention and yielding more significant results. He analyzed selected Co-operatives in Botswana for a period of 1993-1997 and concluded that an aggressive approach has been followed by these firms during all the four years of study.

Filbeck and Krueger (2005) highlighted the importance of efficient working capital management by analyzing the working capital management policies of 32 non-financial industries in USA. According to their findings significant differences exist between industries in working capital practices over time. Moreover, these working capital practices, themselves, change significantly

within industries over time. Similar studies are conducted by Gombola and Ketz (1983), Soenen (1993), Maxwell et al. (1998), and Long et al. (1993).

In a regional study, Pandey and Parera (1997) provided an empirical evidence of working capital management policies and practices of the private sector manufacturing companies in Sri Lanka. The information and data for the study were gathered through questionnaires and interviews with chief financial officers of a sample of manufacturing companies listed on the Colombo Stock Exchange. They found that most companies in Sri Lanka have informal working capital policy and company size has an influence on the overall working capital policy (formal or informal) and approach (conservative, moderate or aggressive). Moreover, company profitability has an influence on the methods of working capital planning and control.

However, Weinraub and Visscher (1998) have discussed the issue of aggressive and conservative working capital management policies by using quarterly data for a period of 1984 to 1993 of US firms. Their study looked at ten diverse industry groups to examine the relative relationship between their aggressive/conservative working capital policies. The authors have concluded that the industries had distinctive and significantly different working capital management policies. Moreover, the relative nature of the working capital management policies exhibited remarkable stability over the ten-year study period. The study also showed a high and significant negative correlation between industry asset and liability policies and found that when relatively aggressive working capital asset policies are followed they are balanced by relatively conservative working capital financial policies.

In literature, there is a long debate on the risk/return tradeoff between different working capital policies (Pinches 1991, Brigham and Ehrhardt 2004, Moyer et. al. 2005, Gitman 2005). Aggressive working capital policies are associated with higher return and higher risk while conservative working capital policies are concerned with the lower risk and return (Gardner et al. 1986, Weinraub and Visscher 1998). Working capital management is important because of its effects on the firm's profitability and risk, and consequently its value (Smith, 1980). Greater the investment in current assets, the lower the risk, but also the lower the profitability obtained. In contradiction, Carpenter & Johnson (1983) provided empirical evidence that there is no linear relationship between the level of current assets and revenue systematic risk of US firms; however, some indications of a possible non-linear relationship were found which were not highly statistically significant.

Soenen(1993) investigated the relationship between the net trade cycle as a measure of working capital and return on investment in U.S firms. The results of chi-square test indicated a negative relationship between the length of net trade cycle and return on assets. Furthermore, this inverse relationship between net trade cycle and return on assets was found different across industries depending on the type of industry. A significance relationship for about half of industries studied indicated that results might vary from industry to industry. Another aspect of working capital management has been analyzed by Lamberson (1995) who studied how small firms respond to changes in economic activities by changing their working capital positions and level of current assets and liabilities. Current ratio, current assets to total assets ratio and inventory to total assets ratio were used as measure of working capital while index of annual average coincident economic indicator was used as a measure of economic activity. Contrary to the expectations, the study found that there is very small relationship between charges in economic conditions and changes in working capital.

In order to validate the results found by Soenen (1993) on large sample and with longer time period, Jose et al. (1996) examined the relationship between aggressive working capital management and profitability of US firms using Cash Conversion Cycle (CCC) as a measure of working capital management where a shorter CCC represents the aggressiveness of working capital management. The results indicated a significant negative relationship between the cash conversion cycle and profitability indicating that more aggressive working capital management is associated with higher profitability. Shin and Soenen (1998) concluded that reducing the level of current assets to a reasonable extent increases firms' profitability. Later on, Deloof (2003) analyzed a sample of large Belgian firms during the period 1992-1996 and the results confirmed that Belgian firms can improve their profitability by reducing the number of days accounts receivable are outstanding and reducing inventories. Teruel and Solano (2005) suggested that managers can create value by reducing their firm's number of days accounts receivable and inventories. Similarly, shortening the cash conversion cycle also improves the firm's profitability.

In the Pakistani context, Raheman (2006) investigated the impact of working capital management on the profitability of 94 Pakistani firms listed at Islamabad Stock Exchange (ISE)

for a period of 1999-2004. He studied the impact of the different variables of working capital management including Average Collection Period, Inventory Turnover in Days, Average Payment Period and Cash Conversion Cycle on the Net Operating Profitability of firms. He concluded that there is a strong negative relationship between above working capital ratios and profitability of firms. Furthermore, managers can create a positive value for the shareholders by reducing the cash conversion cycle up to an optimal level. Similar studies on working capital and profitability includes Smith and Begemann (1997), Howorth & Westhead (2003), Ghosh & Maji (2004), Eljelly (2004), and Lazaridis and Tryfonidis (2006).

Finally, Afza and Nazir (2007) investigated the relationship between the aggressive and conservative working capital policies for seventeen industrial groups and a large sample of 263 public limited companies listed at Karachi Stock Exchange for a period of 1998-2003. Using ANOVA and LSD test, the study found significant differences among their working capital investment and financing policies across different industries. Moreover, rank order correlation confirmed that these significant differences were remarkably stable over the period of six years of study. Finally, ordinary least regression analysis found a negative relationship between the profitability measures of firms and degree of aggressiveness of working capital investment and financing policies. The current study further investigates the impact of the degree of aggressiveness of working capital policies on market measures of profitability i.e. market rate of return and Tobin's  $q$  as well as the risk of firms.

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However, divergent to traditional belief, more investment in working capital (conservative policy) might also increase profitability. When high inventory is maintained, it reduces the cost

of interruptions in the production process, decrease in supply cost, protection against price fluctuation and loss of business due to scarcity of products (Blinder and Maccini, 1991). Czyzewski and Hicks (1992) also concluded that firms with the highest return on assets hold higher cash balances but they did not consider liquidity management beyond static cash and assets ratio. The relationship of Cash Conversion Cycle with firm size and profitability for firms listed at Istanbul Stock Exchange was studied by Uyar (2009) using ANOVA and correlation analysis. The results showed retail/wholesale industry has shorter Cash Conversion Cycle (CCC) than manufacturing industries. Furthermore, study found significant negative correlation between CCC and profitability as well as between CCC and firm size.

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From another angle, Chiou and Cheng (2006) have analyzed the determinants of working capital management. The paper explored that how working capital management of a firm is influenced by the different variables like business indicators, industry effect, operating cash flows, growth opportunity for a firm, firm performance and size of firm. The study has provided consistent results of leverage and operating cash flow for both net liquid balance and working capital requirements, however, variables like business indicator, industry effect, growth opportunities, performance of firm, and size of firm were unable to produce consistent conclusions for net liquid balance and working capital requirements of firms.

(Eljelly, 2004) elucidated that efficient liquidity management involves planning and controlling current assets and current liabilities in such a manner that eliminates the risk of inability to meet due short-term obligations and avoids excessive investment in these assets. The relation between



profitability and liquidity was examined, as measured by current ratio and cash gap (cash conversion cycle) on a sample of joint stock companies in Saudi Arabia using correlation and regression analysis. The study found that the cash conversion cycle was of more importance as a measure of liquidity than the current ratio that affects profitability. The size variable was found to have significant effect on profitability at the industry level. The results were stable and had important implications for liquidity management in various Saudi companies. First, it was clear that there was a negative relationship between profitability and liquidity indicators such as current ratio and cash gap in the Saudi sample examined. Second, the study also revealed that there was great variation among industries with respect to the significant measure of liquidity.

(Deloof, 2003) discussed that most firms had a large amount of cash invested in working capital. It can therefore be expected that the way in which working capital is managed will have a significant impact on profitability of those firms. Using correlation and regression tests he found a significant negative relationship between gross operating income and the number of days accounts receivable, inventories and accounts payable of Belgian firms. On basis of these results he suggested that managers could create value for their shareholders by reducing the number of days' accounts receivable and inventories to a reasonable minimum. The negative relationship between accounts payable and profitability is consistent with the view that less profitable firms wait longer to pay their bills.

(Ghosh and Maji, 2003) in this paper made an attempt to examine the efficiency of working capital management of the Indian cement companies during 1992 – 1993 to 2001 – 2002. For measuring the efficiency of working capital management, performance, utilization and overall efficiency indices were calculated instead of using some common working capital management ratios. Setting industry norms as target-efficiency levels of the individual firms, this paper also tested the speed of achieving that target level of efficiency by an individual firm during the period of study. Findings of the study indicated that the Indian Cement Industry as a whole did not perform remarkably well during this period.

(Shin and Soenen, 1998) highlighted that efficient Working Capital Management (WCM) was very important for creating value for the shareholders. The way working capital was managed had a significant impact on both profitability and liquidity. The relationship between the length of Net Trading Cycle, corporate profitability and risk adjusted stock return was examined using

correlation and regression analysis, by industry and capital intensity. They found a strong negative relationship between lengths of the firm's net trading cycle and its profitability. In addition, shorter net trade cycles were associated with higher risk adjusted stock returns.

Smith and Begemann (1997) emphasized that those who promoted working capital theory shared that profitability and liquidity comprised the salient goals of working capital management. The problem arose because the maximization of the firm's returns could seriously threaten its liquidity, and the pursuit of liquidity had a tendency to dilute returns. This article evaluated the association between traditional and alternative working capital measures and return on investment (ROI), specifically in industrial firms listed on the Johannesburg Stock Exchange (JSE). The problem under investigation was to establish whether the more recently developed alternative working capital concepts showed improved association with return on investment to that of traditional working capital ratios or not. Results indicated that there were no significant differences amongst the years with respect to the independent variables. The results of their stepwise regression corroborated that total current liabilities divided by funds flow accounted for most of the variability in Return on Investment (ROI). The statistical test results showed that a traditional working capital leverage ratio, current liabilities divided by funds flow, displayed the greatest associations with return on investment. Well known liquidity concepts such as the current and quick ratios registered insignificant association whilst only one of the newer working capital concepts, the comprehensive liquidity index, indicated significant associations with return on investment.

Extensive research works on working capital management have been done in both public and private sectors including Multinational Companies in Bangladesh. Mohiuddin (1983) had conducted a study on cash budget. The cardinal objectives of budgeting are planning, coordinating, and controlling, all these three are there in cash budget. Therefore, the effectiveness of cash budget minimizes liquidity problems.

Kiprono D.K. (2004), studied the relationship between cash flows and earnings performance measures for companies listed in the Nairobi Stock Exchange (NSE). His objective was to determine the relationship between return on assets (ROA), return on equity (ROE), and return on net assets (RONA) against the cash flows of firms. To achieve this, regression analysis was

employed on thirty companies listed at the NSE. . The companies were picked randomly and were analyzed for the five year period between 1998 and 2003.

He concluded that there is a positive or direct association between cash flows from operating activities and all the return performance indicators. The results also showed that there is a negative or indirect association between cash flow from financing and investing activities and returns performance indicators. On overall, there is a weak relationship between cash flows and performance indicators. However, he noted that it is important to determine the impact of firm size in cash flow and earnings performance indicators.

Njoroge (2008) in a study of working capital financing policies of 30 microfinance institution in Kenya found out there is a slight difference between the working capital financing policies across the various categories of microfinance, the essence of significant difference would be because micro finances are exposed to the same micro-economic conditions such as political/legal framework as well as inflation rates and tax systems. The Microfinance institutions will therefore tend to make decisions to invest long term funds in current assets that are somewhat similar due to this exposure to the same micro economic conditions.

Mogere (2002), studied WCM among thirty public companies listed at the Nairobi Stock Exchange as at 31<sup>st</sup> December, 2002. The objective of the study was to determine the effect of the amount of long-term financing of current assets on the profitability of companies. It also addressed the question as to whether there is any significant relationship between working capital management policy and the profitability of a company as measured by the return on equity. The study also wanted to establish if public companies in different sectors in Kenya follow different working capital management policies.

Simple regression analysis was done to establish the relationship between working capital policy and the return on equity. The results of the analysis showed that the commonly practiced working capital management policy among the public companies in Kenya is the aggressive approach policy. The findings of the research did not show any significant differences between the working capital management policies across the five sectors. Further, the research findings showed that there were no significant differences in return on equity among companies that practice different working capital management policies. The regression analysis also showed

that the working capital management policy explained only fifty three percent of the variation in return to equity.

An individual company's investment in working capital will be related to the type of industry in which it operates and the essential Working Capital Policy each individual company adopts. This, he argued, would be partly due to the high cost of long-term funds in Kenya which for most part of the research period were above 20%. Management of most companies would thus tend to use the short-term funds like trade creditors which often carry very minimal costs. The cost consideration thus dominates the need to match the duration of the source of funds with the life of the asset to be financed.

Mogere added that, under the maturity matching concept, one would have expected that the companies that require heavy investment in current assets would use more long term financing but this was not the case. The other source of long term funds namely the owners' equity, he notes, might also not have been attractive to the companies because of the costs for instance, floatation cost associated with raising such funds besides the annual dividend expectations from the shareholders.

Bett (2009) In an evaluation of the working capital management practices in Kenyan National Referral Hospitals, he used primary data collected by interviewing persons in the organizations targeting key finance staff found that that government and hospitals often impact negatively on the hospitals revenue particularly considering the extent of poverty levels amongst communities served by these institutions. Whereas treasury regulations require that surplus funds of this institution be invested in treasury bills and bonds and year end surplus be remitted back to government, meaning that the institutions may not be able to plough back the surpluses generated to fund their operations. It is evident that although the two institutions have financial regulations policies to guide financial management practices, these policies are often too general and superficial. Numerous challenges are facing the management of working capital and these challenges adversely affect operational efficiency and thereby created liquidity problems. Addressing these challenges can improve the efficiency of working capital management and in consequence improve the operating cash flow of these institutions.

Islam and Rahman (1994) had article on "Working capital Trends of the Selected Enterprises in Bangladesh". Optimum working capital enables a business to have its credit standing and permits

the debts payments on the date of its maturity and helps to keep itself fairly in liquid position which enables the business to attract borrowing from the banks. It also helps to maintain all-round efficiency in operations. Of all aspects of financial management, working capital management is the vital one.

## **2.14 Conclusion**

Different analyses have identified critical management practices and are expected to assist managers in identifying areas where they might improve the financial performance of their operation. The results have provided owner-managers with information regarding the basic financial management practices. The working capital needs of an organisation change over time as does its internal cash generation rate. As such, firms should ensure a good synchronization of its assets and liabilities.

Working capital in accordance to Weston et al position is concerned with two sets of relationship among balance sheet items. Firstly, the policy question about the degree of total current assets to be held. Though current assets vary with sales, it should be noted that the ratio of current assets to sales becomes a policy issue. A company may hold relatively little proportion of stocks of current assets if it elects to operate aggressively. Such move is to lower the required level of investment and enhance the expected rate of return on investment. Thus, due to excessive tough credit policy, such aggressive policy may as well enlarge the possibility of running out of inventories and cash or sales loss.

The connection/relationship between types of assets and means such assets are financed is the second policy question. One policy requests for harmonizing asset and liability maturities: financing short term assets with short term debt, and long term assets with long term debt or equity. If such policy is implemented, the maturity formation of debt is resolved by considering fixed versus current assets. Meanwhile, short-term debt is often less expensive to long term debt. This implies that the expected rate of return may be more if short term debt is emplo

## **CHAPTER THREE**

### **3.0 RESEACH METHODOLOGY**

#### **3.1 Introduction**

The chapter outlines the overall methodology used in the study. This includes the research design, population of the study, sample size, sample frame, data collection methods, research procedures and data analysis.

#### **3.2 Research Design**

The research was a causal study design. Mugenda and Mugenda, (1999) stated that a casual study is an in depth investigation of an individual group, institution or phenomenon whose purpose is to determine the relationship that has been caused by phenomenon of the study. The research seeks to assess the relationship between working capital and profitability of retail supermarket chains in Kenya.

#### **3.3 Population and Sample**

According to Cooper and Schinder, (2003) a population element is the subject such as a person, organisation, customer database, or the amount of quantitative data on which measurement is being taken. The population of this study was consist of the 6 retail supermarket chains in Kenya these are Nakumatt, Tuskys, Uchumi, Ukwala, Naivas, and Eastmatt. The research was carried out a census survey of all the 6 retail supermarket chains.

#### **3.4 Data and Data collection methods**

The research used data of the selected retail chains, the data was cover a five year period starting from 2005 to 2009, the reason for using this data was because this was a current period and data was readily available these data had not been archived. The research used secondary data that was obtained from financial statements of the companies.

##### **3.4.1 Measurement of Variables**

As Miles and Huberman (1994) point out, a conceptual framework explains, either graphically or in narrative form, the main issues to be studied. A conceptual framework covers the main features (aspects, dimensions, factors, variables) of the study and their presumed relationship (Robson,1993). Robson also argues that developing a conceptual framework enables to be

explicit about what the researcher thinks she or he is doing. It helps to be selective and to decide which relationships are to be of importance and therefore, what data is to be collected and analysed. This study undertakes the issue of identifying key variables that influence working capital management. Choice of the variables is influenced by the previous studies on working capital management.

Net Operating Profitability (NOP) which is a measure of Profitability of the firm is used as dependant variable. It is defined as Operating Income plus depreciation, and divided by total assets.

Average Collection Period (ACP) used as proxy for the Collection Policy is an independent variable. It is calculated by dividing account receivable by sales and multiplying the result by 365 (number of days in a year).

Inventory turnover in days (ITID) used as proxy for the Inventory Policy is also an independent variable. It is calculated by dividing inventory by cost of goods sold and multiplying with 365 days.

Average Payment Period (APP) used as proxy for the Payment Policy is also an independent variable. It is calculated by dividing accounts payable by purchases and multiplying the result by 365.

The Cash Conversion Cycle (CCC) used as a comprehensive measure of working capital management is another independent variable, and is measured by adding Average Collection Period with Inventory Turnover in Days and deducting Average Payment Period.

Debt Ratio (DR) used as proxy for Leverage and is calculated by dividing Total Debt by Total Assets, and ratio of financial assets to total assets (FATA) are included as control variables. Fixed financial assets are the shares in other firms, intended to contribute to the activities of the firm holding them by establishing a lasting and specific relationship and loans that were granted for the same purpose.

All the above variables have relationships that ultimately affect working capital management. It is expected that there is a negative relationship between Net operating profitability on the one hand and the measures of Working Capital Management (number of days' accounts receivable, inventories and accounts payable and cash conversion cycle) on the other hand. This is consistent with the view that the time lag between expenditure for the purchases of raw materials and the

collection of sales of finished goods can be too long, and that decreasing this time lag increases profitability.

### 3.5 Data Analysis

Statistical Package for Social Sciences (SPSS) version 17 was used as an aid to analysis. SPSS is preferred because of its ability to cover a wide range of most statistical and graphical data analysis and is systematic. In order to understand the relationship between working capital and profitability a linear multiple regression models was used. Coefficient of multiple regressions was computed. Multiple regression analysis enables making of better predictions about the behaviour of dependent variable. Coefficient of multiple regressions was computed to establish the proportion of variation in return on assets that are explained by selected ratios.

#### 3.5.1 Model specifications

The general form of the regression model was:

$$NOP = b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + \dots + b_n X_n$$

where  $b_0, b_1, b_2, b_3, b_4, \dots, b_n$  are parameters of the NOP line to be estimated.

$X_1, X_2, X_3, X_4, \dots, X_n$  represents the selected ratios.

Specifically, the regression model was

$$NOP = b_0 + b_1 CCC + b_2 ACP + b_3 ITID + b_4 APP + b_5 DR + e$$

Where;

NOP= Net Operating Profitability

ACP= Average Collection Period

ITID= Inventory Turnover in Days'

APP =Average Payment Period

CCC=Cash Conversion Cycle

DR = Debt Ratio

e =error



## **CHAPTER 4**

### **4.0 DATA ANALYSIS AND INTERPRETATION FINDINGS**

#### **4.1 Introduction**

The data obtained from the financial statements of six large retail chains in Kenya was used to compute the ratios used as proxies to measure working capital management. These were then fed into SPSS version 17. To measure the effect of Working Capital Management on Net operating profitability correlation analysis was used. Fixed effects of time were also evaluated.

This chapter presents data analysis results. It sets off with the descriptive statistics then it presents tests of fixed effect of company specific factors. Correlation analysis follows next and culminates in a discussion of each of the variables.

#### **4.2 Descriptive statistics of the variables**

Descriptive statistics were computed for both metrics measuring profitability and those measuring working capital management. The results show that the average Net Operating Profitability among large retail supermarket chains in Kenya is 0.08 i.e. 8% with a standard deviation of 0.13. Supermarkets have an Average Collection Period of 17 days with a standard deviation of 4.06. The Average Inventory Turnover in Days is 48 days while Average Payment Period for the firms is 68 days. The average Cash Conversion Cycle is -11 days with a huge standard deviation of 35.7. The negative CCC is very healthy for the retail businesses as it means that they get paid 11 days earlier by their customers before they pay their creditors. Debt Ratio on the other hand is 0.21.

**Table 4.2 Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
NOP	30	-.46	.29	.0783	.13411
ACP	30	2.35	17.06	8.1993	4.11290
ITID	30	19.67	139.72	48.7288	32.98869
APP	30	36.75	165.02	68.3580	27.44568
CCC	30	-112.41	71.02	-11.4299	35.54924
DR	30	.00	1.12	.2050	.31751
Valid N (listwise)	30				

**(Source author: 2010)**

Apart from Uchumi supermarket which had a negative mean for Net Operating Profitability of – 0.04, all the other retail chains had positive net operating profitability. The best performing in this respect was Ukwala (mean 0.13) while the least performing was Uchumi supermarket (mean - 0.04). Naivas had the least ACP of 5 days while Nakumatt had the highest at 14 days. Similarly, Nakumatt had the highest ITID of 116 days while Naivas had the lowest of 28 days. Uchumi had the highest APP of 96 days while Eastmatt had the lowest of 41 days. The worst CCC was that of Nakumatt of 44 days followed by Eastmatt of 1 day. All the other four supermarkets had negative cash conversion cycles with the lowest being that of Uchumi of – 48 days. These results suggest the existence of company-specific factors that potentially affect WCM and NOP. As such, test for fixed effects are carried out in the proceeding sections to verify this.

**Table 4.2.1 Descriptive statistics**

	Company					
	Eastmatt	Naivas	Nakumatt	Tuskys	Uchumi	Ukwala
	Mean	Mean	Mean	Mean	Mean	Mean
NOP	.09	.08	.11	.12	-.04	.13
ACP	5.06	5.00	14.21	7.17	10.59	7.17
ITID	37.14	28.27	116.48	36.33	37.81	36.33
APP	41.48	47.09	85.87	69.71	96.30	69.71
CCC	.72	-13.82	44.83	-26.20	-47.90	-26.20
DR	.04	.05	.34	.01	.79	.01

(Source author: 2010)

### 4.3 Comparative means of the variables

The results in the table below suggest that profitability across the six firms was highest in 2008 (mean 0.15) and lowest in 2005 (mean 0.04). ACP has remained fairly constant oscillating between 7 and 10 days. ITID varied over time with the highest being in 2007 and 2009 at 58 days and the lowest being 36 days in 2005.

Apart from year 2006 which had a high APP of 80 days, APP remained fairly constant over time at 65 days. CCC was negative for all the years and it fluctuated a lot between -1 day and -29 days. DR on the other hand remained fairly constant for years 2005 and 2006 at 0.15 and then increased to a new level of 0.25 in 2007 and remained in this level till 2009. These findings seem to indicate that these ratios are time-invariant. Again, fixed effects panel data analysis model is used in the next section to verify this.

**Table 4.3 Comparative means of the variables**

	Year				
	2005	2006	2007	2008	2009
	Mean	Mean	Mean	Mean	Mean
NOP	.04	.06	.06	.15	.09
ACP	7.02	8.36	9.96	8.25	7.42
ITID	36.18	42.75	55.90	53.11	55.71
APP	64.72	80.38	66.54	64.22	65.93
CCC	-21.52	-29.28	-.68	-2.86	-2.80
DR	.14	.15	.25	.25	.24

**(Source Author: 2010)**

#### 4.4 Correlation analysis

**Table 4.4 Correlation analysis**

Correlations							
		NOP	ACP	ITID	APP	CCC	DR
NOP	Pearson Correlation	1					
	Sig. (2-tailed)						
ACP	Pearson Correlation	-.296	1				
	Sig. (2-tailed)	.112					
ITID	Pearson Correlation	.104	.677**	1			
	Sig. (2-tailed)	.585	.000				
APP	Pearson Correlation	-.630**	.659**	.348	1		
	Sig. (2-tailed)	.000	.000	.060			
CCC	Pearson Correlation	.548**	.235	.738**	-.373*	1	
	Sig. (2-tailed)	.002	.211	.000	.042		
DR	Pearson Correlation	-.181	.432*	.295	.434*	-.011	1
	Sig. (2-tailed)	.338	.017	.113	.017	.954	

The correlation analysis above shows that there are high correlations between different measures of working capital management. The correlation between ACP and ITID is (0.677), ACP and APP is (0.659), CCC and APP is (-0.655), CCC and ITID is (0.738). To avoid multi-collinearity problem in the regression analysis, stepwise regression is used so that some of those variables which are highly correlated are removed from the model.

The correlation coefficient between leverage that is financial debt ratio and net operating profitability reveals a negative non-significant relationship between the two variables. This implies that increase in debt utilization by the firms will reduce profitability.

Of the five WCM variables, only CCC and APP have a significant relationship with NOP. CCC has a fairly strong significant positive correlation with NOP (Coefficient 0.548, P-Value 0.002). APP on the other hand has a negative fairly strong correlation with NOP (Coefficient -0.63, P-Value 0.000).

## **4.5 Regression analysis**

### **4.5.1 Estimation of fixed effect of company**

To answer the question as to whether there are company specific variables that underlie the relation between NOP and WCM variables, a mixed model was fitted to the data. The results were as displayed in the tables below:

The results indicate that both company and time have no correlation with the independent variables (p-values 0.422, 0.672 > 0.05). Additionally the estimates of fixed effects for each of the specific companies and years under investigation were all found not to be statistically significant (P-values > 0.05). As a result OLS regression method was applied to the pooled data. Stepwise regression was adopted so as to take care of multicollinearities.

**Table 4.5.1.1 Model Dimension**

<b>Model Dimension<sup>a</sup></b>			
		Number of Levels	Number of Parameters
Fixed Effects	Intercept	1	1
	Company	6	5
	Year	5	4
Residual			1
Total		12	11

**(Source Author: 2010)****Table 4.5.1.2 Type III tests of fixed Effects**

<b>Type III Tests of Fixed Effects</b>				
Source	Numerator df	Denominator df	F	Sig.
Intercept	1	20	9.729	.005
Company	5	20	1.040	.422
Year	4	20	.592	.672

**(Source Author: 2010)**

**Table 4.5.1.3 Estimates of Fixed Effects**

<b>Estimates of Fixed Effects<sup>b</sup></b>							
Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Intercept	.141333	.079415	20	1.780	.090	-.024324	.306991
[Company=Eastmatt]	-.042000	.086995	20	-.483	.634	-.223468	.139468
[Company=Naivas]	-.050000	.086995	20	-.575	.572	-.231468	.131468
[Company=Nakumatt]	-.022000	.086995	20	-.253	.803	-.203468	.159468
[Company=Tuskys]	-.012000	.086995	20	-.138	.892	-.193468	.169468
[Company=Uchumi]	-.172000	.086995	20	-1.977	.062	-.353468	.009468
[Company=Ukwala]	0 <sup>a</sup>	0	.	.	.	.	.
[Year=2005]	-.056667	.079415	20	-.714	.484	-.222324	.108991
[Year=2006]	-.035000	.079415	20	-.441	.664	-.200657	.130657
[Year=2007]	-.030000	.079415	20	-.378	.710	-.195657	.135657
[Year=2008]	.055000	.079415	20	.693	.497	.110657	.220657
[Year=2009]	0 <sup>a</sup>	0	.	.	.	.	.

**(Source Author: 2010)**



### 4.5.2 The NOP model

The following regression model was fitted to the data using stepwise regression method.

$$\text{NOP} = b_0 + b_1\text{CCC} + b_2\text{ACP} + b_3\text{ITID} + b_4\text{APP} + b_5\text{DR} + e$$

The results were as displayed in the tables below:

**Table 4.5.2.1 Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.724 <sup>a</sup>	.524	.448	.09964	1.411

(Source Author: 2010)

a. Predictors: (Constant), DR, CCC, ACP, APP

b. Dependent Variable: NOP

**Table 4.5.2.2 ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.273	4	.068	6.885	.001 <sup>a</sup>
	Residual	.248	25	.010		
	Total	.522	29			

(Source Author: 2010)

a. Predictors: (Constant), DR, CCC, ACP, APP

b. Dependent Variable: NOP

**Table 4.5.2.3 Coefficientsa**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	.264	.052		5.048	.000		
ACP	-.007	.008	-.204	-.797	.433	.292	3.429
APP	-.002	.001	-.349	-1.292	.208	.261	3.831
CCC	.002	.001	.467	2.270	.032	.451	2.220
DR	.027	.066	.063	.404	.690	.772	1.295

(Source Author: 2010)

a. Dependent Variable: NOP

#### 4.6 Summary of findings and interpretation

Descriptive statistics computed for both metrics measuring profitability and those measuring working capital management show that the average Net Operating Profitability among large retail supermarket chains in Kenya is 0.08 i.e. 8% with a standard deviation of 0.13. Supermarkets have an Average Collection Period of 17 days with a standard deviation of 4.06. The Average Inventory Turnover in Days is 48 days while Average Payment Period for the firms is 68 days. The average Cash Conversion Cycle is -11 days with a huge standard deviation of 35.7. The negative CCC is very healthy for the retail businesses as it means that they get paid 11 days earlier by their customers before they pay their creditors. Debt Ratio on the other hand is 0.21.

Apart from Uchumi supermarket which had a negative mean for Net Operating Profitability of -0.04, all the other retail chains had positive net operating profitability. The best performing in this respect was Ukwala (mean 0.13) while the least performing was Uchumi supermarket (mean

- 0.04). Naivas had the least ACP of 5 days while Nakumatt had the highest at 14 days. Similarly, Nakumatt had the highest ITID of 116 days while Naivas had the lowest of 28 days. Uchumi had the highest APP of 96 days while Eastmatt had the lowest of 41 days. The worst CCC was that of Nakumatt of 44 days followed by Eastmatt of 1 day. All the other four supermarkets had negative cash conversion cycles with the lowest being that of Uchumi of – 48 days.

The coefficient of determination is fairly good (R-square 0.52). This means that the predictors explain 52% of the variability in NOP. The ANOVA result shows that the linear relation between NOP and the predictors is significant (P-value 0.01). ITID was removed from the model due to its high collinearity with many of the other independent variables. ACP, APP, CCC and DR were retained in the model.

Average Collection Period was found to have a weak non-significant negative relationship with NOP (coefficient -0.007, P-value 0.433). This is in agreement with the findings of Raheman, Afza, Qayyum and Bodla (2010) who conducted a study on working capital management and corporate performance among manufacturing firms. This means that in order to increase profitability, one has to reduce the ACP.

The average payment period was found to have a non-significant negative relationship with NOP (Coefficient -0.002, P-Value 0.208). The coefficient of Average Payment Period is negative which implies that lengthening the payment period decreases the profitability. This result is not significant but negative sign goes against expectation. Ordinarily, it is expected that the longer a firm takes to make payments to credit suppliers, the higher level of working capital it reserves for use to improve profitability.

Cash Conversion Cycle is a comprehensive measure of working capital management which contains ITID, ACP and APP. The results show that CCC has a weak but significant positive relationship with NOP (Coefficient 0.002, P-Value 0.032). This goes against the norm where the shorter the CCC, the higher the expected profitability. It is in contrast to the findings by Raheman et al, 2010 who found a significant negative relationship between cash collection cycle and profitability among Pakistani manufacturing firms.

Debt ratio was found to have a non-significant positive relationship with NOP (Coefficient 0.027, P-Value 0.69). A similar, but significant relationship was found by Raheman et al, (2010), Soenen (1998) and Deloof (2003). It means that the higher the leverage the lower the profitability of the firm. However this study fails to establish this relation conclusively.

## CHAPTER FIVE

### 5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Summary

The research was undertaken on the relationship between working capital management and profitability, from the previous studies done on working capital management the statement of the problem was established which lead to the study, purpose of the study was to establish the relationship between Working Capital Management and Profitability of retail supermarket chains in Kenya.

The study undertook a literature review of both locally and international studies done in the area of working capital management. The research was a causal study design. The population of the study consisted of the 6 retail supermarket chains in Kenya these are Nakumatt, Tuskys, Uchumi, Ukwala, Naivas, and Eastmatt and a census survey was undertaken. The research used data of the selected retail chains secondary data that was obtained from financial statements of the companies, the data collected covered a five year period starting from 2005 to 2009.

Multiple regression analysis was employed in order to establish if there existed a relationship between working capital management and profitability, profitability was measured by Net operating profit which was defined as Operating Income plus depreciation, and divided by total assets and this was the dependent variable, the working capital management measures were average collection period, inventory turnover days, average payment period, cash conversion cycle and debt ratio.

Descriptive statistics for the various measures of working capital management and profitability was done, correlation analysis was undertaken to establish the correlation between the measures of working capital management and finally a multivariate regression model was applied in determining the relationship between working capital management and profitability of the retail supermarket chains in Kenya.

The study found that there exist a relationship between Working Capital Management and Profitability of retail supermarket chains in Kenya.

## **5.2 Conclusions**

The objective of the study was to establish the relationship between Working Capital Management and Profitability of retail supermarket chains in Kenya. The results shows that the retail sector, Working Capital Management has a significant impact on profitability of the firms and plays a key role in value creation for shareholders as longer Cash Conversion Cycle and Average Collection period have negative impact on Net Operating Profitability of a firm. The Cash Conversion Cycle offer easy and useful way to check working capital management efficiency. For value creation of shareholders, firms must try to keep these numbers of days to minimum level. The negative association of Average Collection Period with Net Operating Profitability has not been validated using fixed effect model. This shows problems with the collection policy in general for the firms in retail sector. There exists negative association between Inventory Turnover in Days and Net Operating Profitability which implies that keeping lesser inventories will increase profitability. Similar to Average Collection Period, the positive association of Average Payment Period with Net Operating Profitability is not proven in case of fixed effect model for the retail sector which shows the problems with the payment policy of firm.

Financial debt ratio and net operating profitability reveals a positive non-significant relationship between the two variables. This implies that increase in debt utilization by the firms will reduce profitability.

The study concludes that there exists relationship between Working Capital Management and Profitability of retail supermarket chains in Kenya, leverage was found to negatively influence the profitability of supermarkets in Kenya.

## **5.3 Policy Recommendations**

The study recommends that for supermarkets to remain profitable they should have working capital management which will help in making decisions about investment mix and policy, matching investments to objectives, asset allocation for institutions, and balancing risk against profitability. Working capital management techniques in supermarkets should focus more on strategic issues for profitability and the ability to achieve strategic objectives.

Several policy implications can be drawn from the above findings of the study which include that working capital management should be the concern of all the retail sector firms and need to be given due importance. The collection and payment policies of the firms in the sector need to be thoroughly reviewed. It is generally argued that firms need to accelerate their cash collections and slowdown their payments. This can only be possible with some professional advice and supervision.

The findings indicate that firm managers can enhance performance of the firms by reducing the number of days in inventories, Cash Conversion Cycle and Net Trade Cycle to a reasonable minimum. This is only possible if the components of Cash Conversion Cycle and Net Trade Cycle that is ACP, ITID and APP may be dealt individually and an effective policy is formulated for these components. Furthermore, efficient Management and financing of working capital can increase the operating profitability.

For efficient working capital management, specialized persons in the fields of finance should be hired by the firms for expert advice because there are number of firms where there is only one department and one person who is looking after all financial activities of firms including handling of accounts.

#### **5.4 Limitations of the study**

The main limitation of this study was some data was not readily available this is because five out of the six companies studied were private companies and therefore their accounts are not published and the researcher depended on an individual in the organisation to provide data because the financial statements could not be given to an outsider. This reduced the probability of reaching a more conclusive study. However, conclusions were made with the available data.

The small size of the population could have limited confidence in the results and this might limit generalizations to other situations, only six retail supermarket chains were taken into consideration while in Kenya there are many small supermarkets.

Another limitation was time with more time the research could have included in the study all the retail supermarkets in Kenya even the ones outside Nairobi and see if the findings could have been different.

### **5.5 Suggestion for Further Research**

The researcher suggests that further research should be done on the relationship between working capital management and profitability of other retail shops such as Bata and major clothing store so as to establish the relationship that exist between them given that each type of retail shop have a different strategic approach.

The researcher suggests that further research should be done on the relationship between working capital management and profitability on supermarket but includes even the small supermarkets that is using a larger number of supermarkets even the ones with say one branch and see if the findings would be different from the ones of this study.

The mobile industry is also a fast growing sector in Kenya and a study should be done on the relationship between profitability and working capital management for the companies in the sector such as Safaricom, Zain, Orange and Yu, these sales is mainly on airtime and internet which is mainly purchased in small quantities and a small range of products.



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