

# **THE EFFECT OF WORKING CAPITAL MANAGEMENT POLICIES ON FINANCIAL PERFORMANCE OF COMMERCIAL AND SERVICES SECTOR FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE**

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## **Abstract**

*The purpose of this study was to examine the effect of working capital policy on profitability of commercial and service sector companies listed at the Nairobi securities Exchange. Financial statements of nine commercial and service sector companies were used for a five-year period (2012-2016). The study findings were; there exists an insignificant positive relationship between conservative investment policy and profitability indicating that an increase in current assets leads to an increased profitability; there exists an insignificant positive relationship between aggressive financing policy and profitability translating to the fact that if this sector firms use more current liability it leads to increase in profitability. There exists a negative relationship between financial leverage and profitability of the firm. This indicates that as the total liabilities decreases it leads to an increase in profitability, managers can increase profitability by reducing the amount of non-current liabilities that they hold. Finally, positive insignificant relationship exists between companies' size and return on assets. The study recommends that firms in the commercial and service sector should adopt an aggressive investment policy and a conservative financing policy so as to be profitable and neutralise the risk associated with an aggressive investment by a conservative financing policy.*

*Keywords: Aggressive financing Policy, Aggressive Investment Policy, Conservative financing Policy, Conservative Investment policy, NSE Kenya*

## INTRODUCTION

Proper management of organization resources is essential for the sake of taking advantage of opportunities and minimize risk. Rational choices have to be made to get maximum returns from the resources invested as well as reduce the associated risk. In the statement of financial position, current assets and current obligations are treated as vital components of the net worth of the business. Working capital is the wealth the organization has at its disposal to run its daily operations being the surplus of current assets after deducting current liabilities. It is one of the major determinants the profitability (Makori& Jagongo, 2013). Chebet (2015) undertook a study using correlation analysis for the 22 manufacturing firms in Nairobi. Using qualitative research results conclusion was that 60% of the variation in financial performance can be attributed to working capital management.

Current assets can be clustered to operating and category that is non-operating. Operating assets reflect those assets which are necessary to keep the business operations flowing. The key operating current assets are cash and marketable securities. CCC is a key component of WCM because it determines the time period it takes a commercial enterprise to convert resources to cash flow. It is the net of borrower's collection period, inventory turnover period and days accounts payable and it is negatively related to ROA (Mitau, 2013). Current asset investment can use loans from commercial bank, supplier's credit, long term debt and equity in its financing. Working capital is a determinant of liquidity to a business. There are many theories that exist relating to working capital. The theories that were looked at in this study include Fishers separation theorem of 1930 which advocates for the separation of investing and financing decisions of a firm and Walkers three preposition theory of 1964 who looked at the tradeoff between risk and return when considering to use debt or equity financing. The need to maintain maximum balance of working capital elements is important for a value creating firm by making sure that it operates having enough cash flow to pay off long term debt, operating expenses and satisfy current and maturing obligations. In Kenya the Capital markets Authority supervises the trading stocks and operations at the NSE to ensure there is liquidity and stability.

Working capital management policy is a decision with regards to a firm's current asset investment and financing decisions. Based on the benefits a firm can decide to be aggressive, conservative or moderate. At whatsoever level of working capital policy adopted by an organization an opportunity cost is incurred in terms of liquidity or profitability. Investing excessively in current assets has an adverse effect on profitability because the resources would have otherwise been used as investment and earn interest to the organization while low level of working capital components results in liquidity problems and stock outs which negatively affects profits. Therefore, effective management of working capital incorporates controlling short term

assets and obligations in an approach that risk of illiquidity and over investment in assets are eliminated (Eljelly, 2004).

### **Working Capital Management Policies**

A well formulated policy and daily check-up is important for working capital management to be successful that is the investment and financing policies. WCM policy is a plan involving decisions about short term assets and liabilities of a company such as their composition, uses and how their mix has an impact on the risk and return behavior of an enterprise (Afza & Nazir, 2007).

Investment policy attribute to how much current assets an enterprise has invested in as portion of its total assets. Investment reflects conservativeness if a company puts a large amount of capital invested in liquid assets while aggressive strategy is when a company invests less in current assets. A study by (Sahail, Rasul, & Fatima ,2016) defined conservative policy as a situation when management of an organization put high investment in short term in relation to long term resources to give support to a given level of sales. Holding constant fixed asset, the ratio of current asset to non-current assets is high. A company that follows this strategy tends to have minimal profits. Aggressive approach in investment is a strategy where relatively minimal current assets investment is done to support a certain sales level. This strategy is indicated by a low ratio of current to fixed assets.

The financing policy indicates the ratio of current liabilities with respect to current assets with a higher ratio indicating aggressiveness. Financing policy is a decision with regards to what allocation of current assets will use sources that are long term in their financing and how much investments will be obtained from sources that are for short duration. If the financing strategy selected is a risky one, then the return holding other factors constant tend to be higher in comparison to a less risky strategy whose expected return will be less.

An aggressive financing policy is a strategy which one finances all current assets, part of permanent assets using short term sources while the remaining permanent assets is financed using long term sources. The managements aim in this strategy is to achieve high earnings using less capital investment to meet working capital shortage. It is risky because the business relies on banks credit terms and interest rates. The firm puts liquidity at risk if it uses more of short term sources to finance its major current assets and fixed assets. Oloo and Mwangi (2014) measured aggressive financing policy by total current liabilities as a fraction of total assets and concluded that AFP has a positive effect on profitability on Kenya firms recommending adaptation of the policy.

In conservative financing approach, long term sources of finance are used by a firm to fund its requirements and short term finance is used during crisis situations. This strategy has a minimal liquidity risky because repayment is spread over a long time period but it is costly because the interest repayment is spread over a longer period. This situation calls for an organization to finances all permanent assets using equity or long term debt. It is a policy characterized by lower risk and lower return. Companies who have adopted conservative financing policies are adequate enough to increase profits through proper management cash conversion and managing vital constituents of working capital such as trade receivables, day's payable outstanding and inventory level at hand to a favorable level. In their study Kaviani, Shahmanosuri, Batebi and Fahim (2014) concluded that companies that followed an aggressive policy exhibited a significant but negative association with return (Sahail, Rasul & Fatima, 2016).

Matching approach to financing is a policy that advocates financing short term requirements using sources that are short term and lengthy sources to finance long duration needs. Schall and Haley (1977) concludes as regards to this principle that the idea is to tie the expected life of funds to the duration the funds are required. If matching is done as accurately there will be no net working capital due to the fact that short term requirements will be financed using short term bases. Moderate approach can also be used in investment where a reasonable amount of current assets is employed to achieve desired sales. Organizations that operate in an environment characterized by uncertainties prefer this policy due to uncertainties about prices, demands and interest rates (Mengesha, 2014).

### **Financial Performance**

It is the determination of how well a company uses resources from its business over a given time period to generates revenue. Performance is expressed in terms of accounting profits since it is an objective measure. Profitability being the ability of an enterprise to make profit year in year out. Profitability is the excess of income over expenses over a given time period. Athanasoglou, Brissimis and Delis (2005) defined profitability as the ability generate revenue over and above its cost, taking to account the capital base. They assert that a profitable and sound sector should be able to overcome negative shocks and make a contribution to economic stability. It is about sustaining the ability of having excess income over expenses. Profitability is therefore important because it is the main purpose of business.

A business can be profitable, break even or operate at a loss. The main goal of every firm is maximizing revenue but upholding liquidity is a critical objective too. Growing profits at the expense of liquidity lead to severe problem to the firm and as such, there needs to be a balance between the two objectives. If a business foregoes profits then it cannot survive in the

long run in contrast if it does not give attention to liquidity it faces the problems of insolvency (Mitau, 2013). A business should always make the right decision that would increase profits.

Some of the proxies of measuring financial performance include after tax profits, return on equity, return on asset and earnings per share. Deloof (2003) used operating income after deducting financial assets from profits. This study used ROA as an indicator of performance which is one of the ratio that denotes profitability being in line with Nazir and Afza (2009), Wanyama (2010), Mitau (2013), Odhiambo (2014) and Mulogoli (2015). It determines efficiency of the management ability to use the company resources at its disposal to generate income.

### **Working Capital Management Policies and Financial Performance**

Working capital practices in an organization has an influence on financial performance since its use affects the revenue stream and finance cost for short term capital requirements. Management's ultimate purpose is to ensure the organization has sufficient and regular cash flow to finance its undertakings. Working capital management objective is to maintain profitability and sound liquidity which will results in a good cash flow that warrants effectiveness and efficiency in service delivery. Horne and Wachowicz (2008) suggested that too much current asset investment reduces an enterprise worth and also reduces its profits. Adequate amounts of current assets are needed to pay current liabilities obligations. There is a high opportunity costs associated with poor management of current assets. Al-Shubiri (2011) in his study using linear regression found a negative correlation between aggressiveness in working capital and ROA while Nyabuti and Alala (2014) concluded that working capital management influences ROA which is the financial performance.

Makori and Jagongo (2013) looked at profitability in the manufacturing firms listed at the NSE found an inverse relationship between profitability and the number of days accounts receivable and CCC, but a positive relationship between profitability and the number of days of inventory and the number of days payable suggesting firms capability of gaining sustainable competitive edge by efficiently and effectively utilization of resources through a careful reduction in the CCC so as to increase the profits. These studies indicate that working capital components affects a company's profitability and its overall performance in the industry.

### **Commercial and Service Sector Firms at Nairobi Securities Exchange.**

Commercial sector business consists of those business whose aim is to make profits with an exception of those involved in manufacturing and agriculture. Nairobi Securities Exchange boasts over 65 listed companies majority of which are in the commercial, manufacturing and banking sectors. There are eleven listed companies at the NSE that fall under the category of

Commercial and Service sector (Appendix 1). These companies range from those that exist in the retail business (Deacon Kenya Ltd & Uchumi Supermarket) while the service sector include those in the media business (Nation Media and Standard Group), clearing and forwarding (Express Kenya) and warehousing services (Atlas Development and Support services). The Nation Media Group and Scan group are companies in this sector that were used to determine the NSE 20 share index as at 2016. Significance of working capital management in the Commercial sector companies cannot be understated. This paper investigated if there is a substantial statistical connexion between the variables representing WCM policy and ROA for the selected listed firms.

### **Research Problem**

Working Capital policy has a major role in a firm's survival since it impacts profitability and the risk that the organization faces (Ireru, 2006). Investing too much resources in working capital makes a firm liquid but reduces profits and value while little investment in working capital increases risk of failure to meet creditor's obligation as they become due but increases organizations profit since funds tied to current assets are less. Thus excessive working capital lead to a decline in risk and a decline in return while little investment in working capital causes risk and return to be high.

Today's business environment requires proper management of working capital investment and financing decisions because failure to maintain an optimal mix affects performance negatively. The management of organizations have to make their investments and financing priorities right because through suppliers credit appears to be cheap ,suppliers can cause a commercial firm to be in a crisis of they hold back stock due to non-remittance of their payment or take legal action against the company. The volatility of the business environment also affect performance of long term investment making profit not being guaranteed this can negatively impact performance and a company's credit rating. The wrong investment and financing decision results in a company not being in a position to carry out its daily operations smoothly as experienced by Uchumi Supermarket, Kenya airways, Dubai and Imperial Bank Kenya (Kihooto,Omagwa,Wachira &Emojong,2016).

The commercial and service sector firms create economic benefit measured by these firms contribution to the GDP and by the jobs and tax revenue generated. They also create value for the wide customer base they serve through passage or shipment using transport services. The connection created between markets all over the world represents an essential asset that generates benefit through aiding foreign direct investment, specialization and other roll over impacts on the economy's productive capacity. Despite the vital role they play firms in

this sector have experienced a lot of financial challenges with regard to excessive supplier credit and poor investment decisions in extreme cases forcing the government to bail them out to avoid liquidation. This necessitated the need to determine if working capital elements play a vital role in profitability because enormous percentage of business failures can be linked to failure to plan and control assets and liabilities (Apuoyo, 2010).

Studies related to WCM done in Kenya include that by Nyakundi (2003) who carried out an assessment of working capital management policies among public companies in Kenya and established that in most adopted aggressive working capital policy and hedging working capital policy due to the high cost of long term funds. Caffaso (2010) selected 18 manufacturing firms at the NSE between 2006 and 2010. Using regression the study findings revealed that there was an adverse but non-significant relation between ROA and financing policy of working capital this being consistent with Afza & Nazir (2007), size and leverage also exhibited a negative relation with ROA. Oloo and Mwangi (2014) analyzed the consequence of AFP on profitability of listed companies at the NSE using gross operating profit as a profitability measure concluded that AFP has a positive effect on profitability while Kungu, Wanjau, Waititu & Gekara (2014) conducted a study on the consequence of aggressiveness and conservativeness in investing and financing policies on performance of Kenyan industrial firms. The results concluded there being a positive affiliation between performance and working capital levels in industrial firms in Kenya.

Most of the local studies focused on the manufacturing sector and a number in the retail sector. The effect of working capital policies on profitability of commercial sector firms listed at the NSE cannot be ignored. This study intends to bridge the knowledge gap, therefore it becomes vital to identify the management policy on working capital an organization uses and its effect on profitability. The problem statement of analysis in this study is: Does working capital management policies affect performance of the commercial sector firms listed at the NSE?

### **Research Objective**

To establish the effect of working capital management policies on financial performance of commercial and service sector firms listed at the Nairobi Securities Exchange Kenya.

### **Value of the Study**

The study will be of significance to the managers of retail firms, Government, Customers and the scholars as follows:

Managers are keen to know the consequences of the decision they make that will affect their ability to pay short term creditors. Commercial companies deal with a high proportion of

consumer goods therefore it is important for the management to ensure that there is enough financial resources to facilitate purchases and to pay suppliers on time because failure to make a timely payment negatively affects the company's credit rating. Management have to make decisions that maximizes wealth to its stakeholders so they have to know how much to invest and how to finance the investment.

It is essential for the government to understand the policies adopted by industries that exist in an economy so that it can incorporate in its strategic plan how the economy will grow taking in to consideration the contribution from each sector. It is from these firms that the government obtains revenue in form of taxes so their survival is a key factor to the government. The government will also be in a position to establish how wealth is distributed in the economy and establish a cap if there is exploitation from credit providers.

This study will increase the knowledge to the scholars of commercial sector especially on matters of maintaining optimal working capital and their influence on the performance of these firms. It may also encourage further research on other factors influencing working capital position of the commercial firms and other sectors, the material will form a source of reference by other scholars.

From the policies an organization has adopted the public will be able to know if it is worth to invest resources in such a firm so as to get a return on their investment. Suppliers will also be in a position to know the financing policies used by a firm and determine if it will be worth to grant credit period based on the firms risk profile. The consumers will also be in a position to determine if there will be continuous supply of goods to the retail outlet from the suppliers because too much liabilities with suppliers causes them to withhold supplies.

## **LITERATURE REVIEW**

### **Theoretical Review**

There are several theories that relate to the above topic on working capital. They include:

#### **Fisher Separation Theorem**

This theorem is named after Fisher (1930) who first proposed it. It lay down that the goal of a firm is to grow its value regardless of the preference of the firm owners. According to Hochstein (2001), in a perfect market investment decision is guided by the objective of wealth maximization and not individual's subjective decisions about consumption. It denotes that companies should separate investment decisions and how to finance the investment. A company should determine the amount of working capital investment required and how it will finance it. Gross working capital is the investment in current assets while net working capital



indicates how much to invest in working capital. If net working capital is positive a company will finance its working capital needs using equity or long term debt but if the net-working capital is negative short term capital will be used to finance the working capital needs.

This theory has a relationship with the variables in this study in that a company should make investment decisions in relation to working capital current assets (Investment policy) based on wealth maximization criterion and the methods of financing the investments using payables(financing policy) should also be guided by the same objectivity.

### **Walkers Three Preposition**

Walker (1964) made effort by testing three prepositions that take to account risk –return characteristic of working capital. He looked at the outcome of adjustment in working capital amount on return in 9 industries for the year 1961 and found a negative link amidst the amount of working capital and the rate of return. Walker based on his observation formulated prepositions as below:

Preposition 1 -If the level of working capital is to long term capital is varied, the amount the risk the firm takes is also varied and the chances for gains or loss are increased. If an enterprise would like to decrease the risk level to the lowest, it should use equity capital for funding working capital but the firm reduces its chances for higher gains on equity capital by using equity as it would not benefit from the benefit of leverage. The challenge becomes how much debt capital should a firm employ which is determined by the attitude of towards risk and return that management have. Based on this he developed the second preposition.

Preposition 2-The kind of equity or debt capital utilised to fund working capital has an impact on the risk level that the organisation takes and opportunities for gains or losses. The debt ratio and the maturity time of the debt affects the risk and return balance. The longer the debt period, the lower the risk level as management would have time to obtain funds from its operations to pay the obligation although debt that is long term is expensive. This lead to development of his third preposition:

Preposition 3-The larger the difference amongst maturities of a firms debt obligation instruments and the movement of funds that are generated from internal operations, the greater the risk and the lesser the differences between the movement of internally generated moneys and the maturities of the firms debt instruments the lesser the risk. Walker empirically tested the first preposition. Weston and Brigham (1972) on the second preposition divided debt to long and short term suggesting that whenever the use of short term would lower the average cost of a firms capital it should be used instead of long term capital and suggesting a business would only invest in short term securities if there are funds after paying short term obligations.

This theory is related to the variables of the study in that a company should strike a balance between how much current liabilities it should use in order to benefit from financial leverage and avoid excessive risk to the organisation. There should be matching between the flow of funds and the debt instruments that the organisation uses so as to avoid cash flow crisis.

### **Trade off Model**

Myers (1984) introduced this concept of capital structure where firm's trade off the benefit of debt against the cost of bankruptcy. This theory states that there exists an optimum debt ratio where the marginal benefit of debt equals to its marginal cost. This theory demonstrates that firms choose their ideal level of working capital by comparing the marginal cost and benefit of holding cash. Increasing the net-working capital diminishes the risk of inability to pay bills on time as well as reduces profits and returns while increases the carrying cost of inventory and default risk from accounts receivable. A smaller investment in current assets would result in interrupted production due to stock outs, inability to pay creditors on time making them demand disadvantageous payment terms. The objective of a firm should be to increase profits while preserving liquidity because a firm faces the risk of bankruptcy if it pays attention to profits alone. There should be a tradeoff between these two objectives of the firm.

This theory is related to the variables in this study in that an aggressive policy is associated with a high risk which ought to yield a high return while a conservative policy is associated with a lower risk due to the high current assets and lower return.

### **Determinants of Financial Performance**

Commercial enterprises exist to make profits so they have to adjust to the environment they operate so that they can deliver the goods and services efficiently and competitively as possible. The determinants of performances can arise from a firm's internal and external factors. Internal aspects consist of the organizations own characteristics and the management's decisions. The external aspects are country-wide dynamics beyond the managements control and have an effect on profitability. The factors include:

#### **Company's Size**

A relationship exists between a firm's size and profitability due to economies of scale and elevated clients bargaining power. Larger firms having enormous asset base that are well managed tend to perform better than smaller firms who have a smaller total asset base. Due to high fixed cost larger firms tend to maximize their production so as to benefit from economies of scale making them incur a lower average cost of production as compared to smaller firms (Odaló, 2015). Larger firms can also diversity in there production and in the market they serve

therefore countering the risk of non-performance in one market with a better performance in another market. A larger firm is also in a position to negotiate cheaper supplier credit to finance its short term financial needs compared to a smaller firm which is considered risky so the interest on its borrowing tend to be high to counter the risk involved. High interest reduces profits and increases the risk of bankruptcy by the smaller firm (Russo, 2013)

#### Economic State

Economic growth is characterized by advancement in technology which if used in the production process there will be a reduction in the cost of production, demand for products with elastic demand will increase translating to increase sales profit .During recession demand, sales and profits are negatively affected due to the low levels of income (Mizda & Javed, 2013).Financial institutions face liquidity problems and become risk averse about lending to businesses ,other banks and individuals .When businesses lack finance for their projects profits are negatively affected. The government also faces public finance deficit and can finance its budget through increasing levels of corporate and individual taxes negatively affecting consumer demand. During economic recession interest rate will be rising due to high inflation at home in relation to foreign country, this makes foreign currency to appreciate in relation to home currency. Devaluation of local currency will lead to an escalation in import prices leading to an increase in cost of production for companies that obtain raw material and plant and machinery from other countries translating to increase in costs but works to the benefit of exporters who will sell due to the cheap price of the local goods in the international market.

#### Capital Structure

It shows how an organization is actually financed in relation to the owner invested funds and resources from outside determined by taking total equity over total assets. Debt financing increases risk of insolvency, affects cash flows and restrictions can be imposed by the creditors on the investment to be made by the company based on the level of risk of the investment thus impacting negatively on performance. However debt financing impact on profitability positively in that it is an allowable expense for tax purposes resulting in a tax savings in the profits (tax shield effect). Equity financing impacts positively on profitability in that there is no interest payment from the profits (Yeboah & Yeboah, 2014).However it impacts shareholders negatively in that what would otherwise be distributed to them as dividend is reinvested as dividend announcement has an impact on share price (Chebet, 2014).It is up to the management to strike a balance between debt and equity that will be beneficial to an enterprise.

#### Competition

A monopoly producing good with no close substitutes can easily increase its profits through price and supply adjustments while a non-monopoly can only make minimal profits because

such a firm is constrained by price limit. In an industry with few firms producing goods with no close substitutes and there exists entry barriers profits made by such firms are higher compared to an industry with barriers to entry because of high competition. Competition forces firms to reduce their prices because buyers will not buy from them due to the high cost which lead to a sales reduction impacting negatively on profits.

### **Empirical Review**

Numerous research exist that study working capital and profitability, the results found lead to different findings. The need to determine the genesis of organization failure whether it is because of absence of finance that is short-term or weak management lead to the examination of working capital and financial management in the United Kingdom by Peel and Wilson (1996). Using quantitative survey methods they concluded that for small business in the growth stage an effective WCM is a vital contributor to improved profits and liquidity which is vital for organization survival. They emphasized that firms ought to use precise working capital methods so as to minimize chances of business failures and improve performance. They gave importance to sound credit management and efficiency in working capital as being vital to success of small firms.

Jose, Lancaster and Stevens (1996) looked at the link amidst aggressiveness in working capital management along with profitability taking CCC as a determinant of working capital with a short CCC representing aggressiveness .Their finding suggested that a negative relation exists between CCC and profitability suggesting that an aggressive WCM is linked with a high profits. Deloof (2003) tested the profitability and working capital relationship of Belgian companies between the periods of 1960 to 1992. Deloof using day's sales outstanding, CCC and inventories as determinants of trade credit. Conversion cycle of cash was a key indicator of working capital management .In his conclusion he showed that profitability can be improved by the management through lessening the duration of accounts receivable, stock turnover and also reduction in the net operating cycle.

Investigating WCM policy and firm's profitability relationship Afza and Nazir (2009) sampled of 204 companies that are not financial on KSE for the duration between 1998 and 2005. Their study established differences between the needs of working capital and financing policies across different industries. In addition regression results concluded that there exists an adverse link between a firm's profitability and aggressiveness in working capital recommending adaptation of a conservative approach. Danuletiu (2010) explored the effectiveness of working capital of 20 firms from Alba country for the period between 2004 and 2008 .Using Pearson correlation his results showed that most of the companies applied aggressive policy for cash

conversion cycle and least adopted conservative policy and that profitability has an inverse link with working capital.

Vida, Seyed, and Rezvan (2011) in their study on WCM and profitability used companies listed on TSE, the examination period being between the years 2004 and 2008. The method used being Pearson correlation multivariate regression and the findings reveal that the CCC which was a measure of WCM has a relationship with corporate profits while a negative significant association exists between financial debt ratio and profitability. Sharma and Kumar (2011) findings when analyzing Indian companies also conclude that WCM is positively related to profitability. Their study include revelation that day's inventory turnover and payable days have a negative correlation with profitability on the contrary receivable days show a positive link with profits so as the cash conversion period.

Amiri (2014) conducted a research on the relationship between aggressive investment, financing policy of working capital with profitability of ninety three firms listed at TSE for a five year period between 2005 and 2009. The results indicated that there is no significant relationship between AIP, AFP with ROA and ROE. Javid and Zita (2014) studied WCM and profitability of Pakistan Cement industry. Using OLS regression method they found a negative relationship between profitability and the degree of aggressiveness in working capital investment and financing policies. Temtine (2016) when he researched on the relationship between WCM policies and profitability of 176 small manufacturing firms for the period between 2004 and 2013 concluded using regression that ROA increased as companies adopt a conservative working capital IP. Using Tobin -Q his findings were that an increase in working capital investment policy by one unit results in an increase in Tobin-Q by 1.811 units.

Local studies on working capital management have also been conducted including research by: Njeru (2010) who researched on consequence of working capital policies on profitability of SACCOs in Nairobi. Using Multivariate regression model and a population sample of thirty five SACCOs concluded that organizations having highly liquid working capital are less risky and exhibit lesser profits while cash conversion cycle is an important factor in WCM. He asserted that conservative policy cuts the cost of supply and safeguards against frequent price changes, gives time to customers to check if the goods they have received is according to specification, assists firms to reinforce its relation with clients and lessens the probability of loss of business and interruptions due to inadequacy in the production process.

Apuoyo (2010) looked at the relationship between WCM policies and profitability for companies quoted at the NSE between the periods 2005 and 2009. Using a sample size of nineteen and the method employed being regression analysis, his conclusion was that profitability increased with size, gross working capital efficiency and with lesser aggressiveness

in the asset management. Concluding on the existence of a positive relationship between conservative working capital management policy and profitability of companies quoted at the NSE. Findings of his research also showed that there are significant differences between working capital management policies across different sectors.

Gakure, Chelunget, Onyango and Keraro (2012) reviewed the link amid WCM and profitability of fifteen companies in the manufacturing sector at the NSE from the year 2006 to 2010 using secondary data collected. Regression was employed to establish the link between the variables. The outcome was that a negative bond exists between performance of a firm and liquidity. The study further indicated existence of a negative link between average payable periods, accounts collection period, inventories holding period and profitability.

Mitau (2013) looked at the effect of WCM on non-financial institutions listed at the NSE using a sample of 20 companies for the period between 2008 and 2012. Using regression his conclusion was that although non-financial institutions follow a conservative working capital policy there is a positive correlation between return on assets and ratio of current liabilities to total assets. Mwaniki (2013) looked at the relationship between WCM policies and performance Kenyan microfinance institutions. Using six microfinance for the year 2011 and the method being Pearson correlation his conclusion was that there exist a negative significant relation between ROA and working capital component. His findings also concluded that the most commonly practiced WCM policy among public companies in Kenya is the aggressive policy.

Nyabuti and Ondiek (2014) provide evidence on the relationship existing amid the policy of working capital employed and financial performance of companies quoted at the NSE. The information and data used was from ten listed companies for the duration between 2008 and 2012 obtained from published financial statement available at the NSE annual Handbook. Their study settles on the existence of a positive link between working capital management policy and performance of companies listed at the NSE. Changes dependent variable ROA was influenced by the independent variable which were AIP and AFP. WCM is the top management's responsibility and the long run sustainability of requires risk-taking and adaptation of aggressive policy for profitability

Mulogoli (2015) conducted a research on the relationship between WCM policies and performance of forty one non-financial companies listed at the NSE for a five year period between 2010 and 2014. Regression analysis using ordinary least square revealed existence of a strong positive statistically significant link between financial performance and working capital policies. With results indicating that financial performance changed by 65.7% when there is an adjustment of one unit in the investment policy while a unit change in financial policy caused a change of 26.2% in financial performance. He recommended that financial regulatory agencies

should work with companies to ensure adequate reporting of working capital management components in financial reports.

**Conceptual Framework**

The study used two variables the dependent and independent variable. The choice of the variables relate to previous studies on working capital. The model used working capital management policies as the independent variable and sought to investigate how it impacts performance of commercial and service sector firms. Performance was measured by ROA which equals net income over total assets being a profitability measure among listed commercial firms. ROA would explain how efficiently firms are utilizing their resources in their quest to maximize their profits. Increase in ROA corresponds to increase in profitability.

The investment and financing policies was be determined by the degree of aggressiveness/conservativeness. AIP implies minimal level of investment in current assets as a portion of total assets whereas a conservative IP places a greater investment in liquid assets. To measure the IP the following ratio was used:

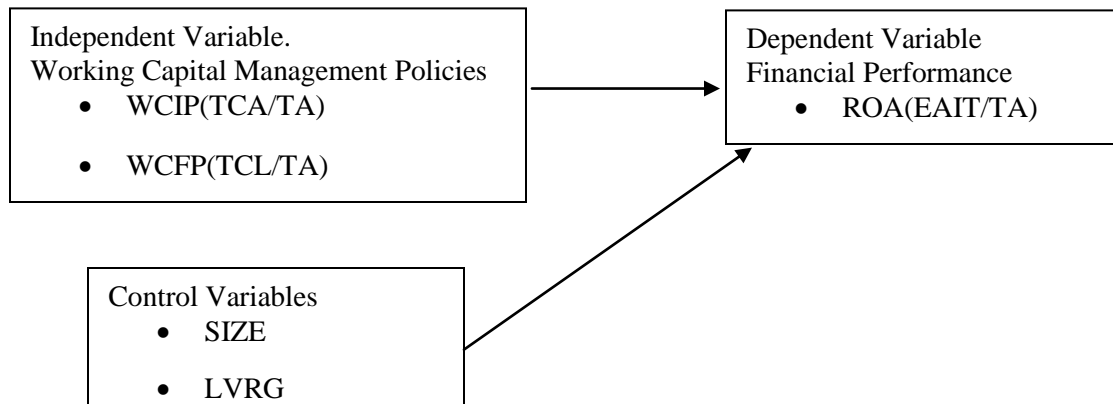
$$\text{Investment policy} = \frac{\text{Total Current Assets}}{\text{Total Assets}}$$

With a lower ratio implying an aggressive policy and a higher ratio implying conservativeness. This being consistent with Afza and Nazir, (2007), Javid and Zita, (2014) and Nyabuti and Alala (2014).An AFP uses a higher level of current liabilities while a conservative one uses more of the long term debt capital. Aggressiveness (Higher ratio)/conservativeness (Lesser Ratio) of financing policy was determined by the following formula:

$$\text{Financing Policy} = \frac{\text{Total Current Liabilities}}{\text{Total Assets}}$$

Financial Leverage and company’s size were used as control variables so as to neutralize their impact like other researchers did such as Deloof, (2003); Caffaso (2010); Nyabuti & Alala, (2014).

Figure 1: Conceptual Model



## Summary of the Literature Review

Taking to account previous works it is evident that working capital policies impacts financial performance. The use of short term or long term finance to fund the working capital has different impact on a firm's profitability. Short term finance enhances return because a firm enjoys the advantage of cheap funding from current liabilities offered by trade creditors. Firms are vulnerable to fluctuations in the level of working capital because short term financing increases the amount of cash outflow to pay monthly obligations. Pandey (1993) notes that using suppliers credit which is interest free is a better source of financing; although it is cheap it is a high risk capital. Empirical studies by Oloo and Mwangi (2014) concluded that aggressive policy has a positive influence on profitability recommending the use of aggressive financing so as to improve their profitability in contrast Apuoyo (2010) in his study found a positive relation between conservative policy and profitability.

Important aspects that give relevance to working capital management policy are investment and financing while risk and returns give different profit levels depending on particular working capital policy adopted by an individual firm due to different operating business characteristics. Copeland and Weston (1998) document preference to play it safe philosophy of conservative working capital management policy. They observe that a conservative policy will provide sufficient finance to cater for unanticipated events. The firm is not subjected to frequent interrupted production and stock outs of short term loans because of the risky nature of short term finance conservative policy is preferred. Caffaso (2010) in her study resolved there being no substantial relationship between WCM and profitability this being consistent with Afza and Nazir (2007).

Studies document that there is no working capital policy that is superior. There seems to be no conclusive agreements as to which working capital management policy guarantees a higher profitability and this study therefore was a modest attempt to narrow the knowledge gap by analyzing the link between the policies of working capital management adopted and profitability among the Kenyan commercial and service sector firms listed.

## RESEARCH METHODOLOGY

### Research Design

This is a blueprint of the methods used to carry out this study. Research design is a strategy or plan to get participants, and the method to be used to collect data needed from them to attain at a final outcome about the research question. This study applied both descriptive as well as quantitative research techniques. The main objective of descriptive research is to furnish information on the behavior of the chosen population or event. Descriptive research was



considered prior to quantitative research design as it provides an overall overview as what variables to test quantitatively. Mugenda and Mugenda (1999) explain that the goal of descriptive study is to find out and report situations as they appear and assist in determining the condition of the population. Descriptive research utilizes elements of both qualitative and quantitative research its major concern being to answer the question “what is”. It comprises gathering data which characterizes events, organizes, tabulates and characterize the data collection. The design was appropriate based on the study objective there being a desire to establish effect of working capital decisions on commercial firms performance.

### **Population**

The population under review should portray a common observable characteristic which shall be used to generalize the findings of the study. A population is the largest setoff the observation which a sample is derived (Bryman & Bell, 2007). The population in this research constituted eleven commercial and service sector firms listed in the NSE for the last 5 years starting from 2012 to 2016 as per Appendix 1. The study period was based on the fact that the previous studies done did not take into account the stated period of 2012 to 2016 in the commercial and service sector.

### **Data Collection**

Data Collection refers to assembling of factual data so as to acquire insight about a situation and respond to questions about the research (Flick, 1988). There are two classes of data namely primary and secondary. Primary data attributes to first-hand information collected from the subjects under study while secondary data refers to data that has already been obtained and synthesized through statistical process.

This research utilized secondary data source. Data on working capital policy and profitability was obtained from audited financial statements of the listed commercial sector firms at the NSE. The data from the audited financial statement was readily available at the company’s website and NSE investor’s handbook 2015-2016. The specific information obtained during the period was in the form of annual net income, current assets, current liabilities, fixed assets as well as the financing aspects of the long term debt for each of the five years .

### **Data Analysis**

Cooper and Shindler (2008) express data analysis as being the mechanism through which data collected is condensed to a more controllable and acceptable size which the researcher can begin to analysis its flow, execute statistical methods and give a summary of the data.

Quantitative research was applied to come up with the recommendations of this study. Given that the data in this study exhibits characteristic of time series the data from this study will be analyzed using panel data regression analysis. The benefit of panel data is that it recognizes that different companies have different characteristic, it acknowledges the variability on the data and it provides more informative data, hence panel data contributes more efficiency than the methodology of cross sectional data (Baltagi, 2001). Panel data utilizes observations that carries cross sectional dimension and time series dimension.

### **Analytical Model**

Descriptive and quantitative statistical techniques were applied to investigate effect of management of working capital decisions on profits of Commercial and service sector firms. Multivariate regression model based on panel from annual reports from selected firms was employed to look at the relationship amidst WCM policies and profitability. Impact of the policy was modelled using the following regression equations:

$$Y = \alpha + \beta_1 (WCIP) + \beta_2 (WCFP) + \beta_3 (LVRG) + \beta_4 (SIZE) + \varepsilon$$

Where,

$$i=1, \dots, 11, t=2012, \dots, 2016$$

Y= Financial performance calculated by taking net income over total assets.

SIZE=Total assets natural logarithm

LVRG=Financial Leverage determined by taking total assets as a proportion of total liabilities.

WCIP (TCA/TA) =Working Capital Investment policy calculated by total current assets divided by total assets.

WCFP (TCL/TA) = Working Capital Financing policy calculated by total current liabilities as a fraction of total assets.

$\alpha$  = Constant

$\varepsilon$  = Error term

### **Test of Significance**

R –squared is a goodness of test statistic that was used to test validity on how well the regression function fits the data .R<sup>2</sup> is the square of the correlation coefficient between the values of the dependent variables and the corresponding fitted values from the model. ANOVA was be used to establish the model significance and the relationship between financial performance and working capital management policies. The test was performed at a 95% confidence level to determine if the model fits the data.

## ANALYSIS, RESULTS AND DISCUSSION

### Descriptive Statistics

The study carried out a census of the eleven commercial and service sector firms listed at the Nairobi securities Exchange as at December 31, 2016. The data analysis consist of five years data of nine companies where complete data was obtained from years 2012 to 2016 .The response rate being 82%. Using STATA and excel regression analysis was done to find out the impact of WCM policies on profitability of commercial and service sector firms. The table below gives the descriptive findings for the variables used in this study.

Table 1: Descriptive Statistics

	<b>N</b>	<b>Mean</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Standard Deviation</b>	<b>Coefficient of Variation</b>
<b>ROA</b>	45	-0.037	-2.073	0.258	0.345	-9.216
<b>WCIP</b>	45	0.455	0.129	0.880	0.242	0.531
<b>WCFP</b>	45	0.362	0.121	1.286	0.190	0.525
<b>LVRG</b>	45	0.524	0.272	1.419	0.253	0.483
<b>SIZE</b>	45	6.749	5.581	8.260	0.708	0.105

From the table, we can observe that the dependent variable ROA, has a mean of -0.037 and varies from -2.07 to 0.258 which means that on average commercial and service sector companies for the five year period had negative returns. Standard deviation of the variables ROA, WCIP, WCFP leverage and size are 0.345, 0.242, 0.19, 0.253 and 0.708 respectively. The variable investment policy has a mean of 0.45 and varied from 0.13 to 0.88 indicating that most commercial and service sector companies use aggressive policy in investing. The variable working capital financing policy had a mean of 0.36 and varied from 0.12 to 1.29 indicating that most companies in this sector use conservative policy in financing. This suggests that these companies improve their profits by having low levels of current liabilities. Variable representing size had a mean of 6.75 and varied from 5.58 to 8.26. Financing leverage had a mean of 0.524 with minimum of 0.272 and a maximum of 1.419 which indicates that on average companies in this sector use slightly more debt in their financing.

### Correlation Analysis

The Pearson correlation coefficient was used to establish the relationship between the independent and dependent variables.

Table 2: Correlation Matrix

		ROA	WCIP	WCFP	SIZE	LVRG
ROA	Pearson Correlation	1				
	Sig.(2 tailed)					
WCIP	Pearson Correlation	0.3443*	1			
	Sig.(2 tailed)	0.0206				
WCFP	Pearson Correlation	-0.1993	0.0334	1		
	Sig.(2 tailed)	0.1893	0.8274			
SIZE	Pearson Correlation	0.2016	-0.1825	0.014	1	
	Sig.(2 tailed)	0.1842	0.2301	0.9273		
LVRG	Pearson Correlation	-.3780*	0.4765*	0.6743*	0.1871	1
	Sig.(2 tailed)	0.0105	0.0009	0.0000	0.2184	

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

Table 2 indicates that return on asset is positively related with WCIP and SIZE with correlation coefficients of 0.3443 and 0.2016 respectively. On the other hand, ROA is negatively correlated with working capital financing policy (WCFP) and leverage (LVRG) with correlation coefficients of -0.1993 and -0.3780 which are weak with insignificant with p-values of 0.1893 and significant 0.0105 respectively. The above result indicates that an increase in debt decreases the firm profitability and the use of aggressive financing policy by the firms affects profitability negatively. Financial policy correlates highly with leverage at 0.6743. This positive significant correlation is due to the fact that all of them have liabilities as a factor in determining each of them. WCIP and SIZE also exhibit positive correlation with leverage however the size value is insignificant at 0.05 level.

## Diagnostic Test

### Normality

Normality of data was assessed using Skewness and Kurtosis statistics (Tabachnick & Fidell, 2007). The study variables are normally distributed as it is violated if p-values fall beyond 2 or below -2.

Table 3: Normality Test

Variable	Obs	Pr (Skewness)	Pr (Kurtosis)	adj chi2 (2)	Prob>chi2
ROA	45	0.0000	0.0000	55.58	0.0000
WCIP	45	0.5456	0.0000	18.80	0.0001
WCFP	45	0.0000	0.0000	34.89	0.0000

**Multicollinearity**

Variance Inflation Factor (VIF) was used to test for multicollinearity. Value larger than 10 indicates existence of multicollinearity problem. VIF values in this study are below 10 indicating nonexistence of multicollinearity problem.

Table 4: variance inflation factor

VARIABLE	VIF	1/VIF
LVRG	3.47	0.288322
WCFP	2.65	0.377521
WCIP	1.85	0.541737
SIZE	1.06	0.941153
Mean VIF	2.26	

**Heteroscedasticity**

There was no problem of heteroscedasticity and multicollinearity (auto-correlation). White test for heteroscedasticity (Appendix III) shows residuals are homogeneous as p-value 0.2577 is more than 0.05. In addition, Durbin-Watson showed a statistic of 2.243634 meaning that there is no autocorrelation problem of the residuals in the model.

**Model Specification Test**

Hausman test is used to differentiate between fixed effects model and random effect model in panel data. Fixed effect model assumes firm specific intercept which captures the effects of variables particular to that specific firm, and eliminates anything that is time invariant. In a random effect there is a single common intercept and it changes from firm to firm in a random manner.

Table 5: Hausman Test Statistic

	---- Coefficients ----			
	(b) fixed	(B) random	(b-B) Difference	sqrt (diag(V_b-V_B)) S.E.
TCA/TA	2.070779	.3769216	1.693857	1.392709
TCL/TA	-.3081984	.0117015	-.3198999	.6341035
SIZE	-.3306202	.1202774	-.4508976	.5721829
LVRG	-.2936397	-.4681024	.1744627	.4310539

b = consistent under Ho and Ha (alternate hypothesis); obtained from xtreg

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

Test: Ho: difference in coefficients not systematic

$$\begin{aligned}\text{chi2 (4)} &= (b-B)'[(V_b-V_B)^{-1}](b-B) \\ &= 4.07 \\ \text{Prob}>\text{chi2} &= 0.3960\end{aligned}$$

If Prob>chi2 value is less than significant 0.05 we use the fixed model otherwise random effect model.

### Regression Analysis

This section looks at the empirical data in ANOVA and regression analysis to determine whether the results are significant.

#### **Model Regression Summary**

The coefficient of determination (R –Squared) measures the variability that is accounted for in the statistical model. It can be concluded that there is a relationship between financial performance and the working capital management policies, size and leverage when these components are considered together which explain 27.18% of changes in ROA. While the remaining 72.8% are due to other factors not identified in this research but impacts profitability

Table 6: Model Summary

Model	R	R-Square	Adjusted R Square	Mean Squared Error
1	0.5169	0.2718	0.1990	0.30845

#### **Empirical Model**

The regression equation is as follows:

$$Y = \alpha + \beta_1 (\text{WCIP}) + \beta_2 (\text{WCFP}) + \beta_3 (\text{LVRG}) + \beta_4 (\text{SIZE}) + \varepsilon$$

Where,  $i=1, \dots, 9$ ,  $t=2012, \dots, 2016$

The Hausman test showed insignificant differences between the coefficients of the random and fixed effect model. Therefore, the study used the random effects model.

Table 7: Random Effects GLS Regression

Random-effects GLS regression		Number of observations = 45	
Group variable (i): company		Number of groups = 9	
R-sq.: within = 0.0606		Observations per group: min = 5	
between = 0.7754		average = 5	
overall = 0.2718		max = 5	
Random effects u_i ~ Gaussian		Wald chi2 (4)	= 14.93
corr (u_i, X)	= 0 (assumed)	Prob > chi2	= 0.0048

roa	Coefficients.	Std. Err.	z	P> z	[95% Conf. Interval]	
tcata	.3769216	.249862	1.51	0.131	-.1127997	.8666428
tclda	.0117015	.387379	0.03	0.976	-.7475474	.7709504
size	.1202774	.067069	1.79	0.073	-.0111755	.2517303
lvrg	-.4681024	.355684	-1.32	0.188	-1.165231	.2290262
_cons	-.7884224	.520261	-1.52	0.130	-1.808115	.2312705

sigma_e	.3152641
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The resultant regression equation

$$ROA = -0.788 + 0.377WCIP + 0.117WCFP + 0.1203SIZE - 0.468LVRG + \varepsilon$$

### Analysis of Variance

Sum of squares measures the variability of a data set. Given our regression model on the sum of squares, is larger than residual, we can conclude that our model accounts for most of the variation on the dependent model, which is return on assets. We use the F statistic to measure if the regression model fits well. From the results we can see that F value of 3.73 which was not significant at 5% level of and a p-value of 0.00113 which is less than 0.05 indicates that the model was good for the study.

Table 8: ANOVA<sup>a</sup>

	Degree of Freedom	Sum of Squares	Mean Square	F	Significance F
Regression	4	1.42054786	0.355136964	3.73	0.00113 <sup>b</sup>
Residual	40	3.80554304	0.095138576		
Total	44	5.2260909			

<sup>a</sup> Dependent Variable: Return on Assets <sup>b</sup> Predictors: WCFP, WCIP, SIZE and LVRG

## Interpretation of Findings

From the findings, most of the coefficients were not significant but portray existence of a relationship between ROA and the variables. Based on the results working capital investment variable (TCA/TA) was insignificant in at 95% confidence level ( $p$ -value=0.131). This being consistent with the studies by Caffaso (2010) and Amiri (2013). The value of the coefficient was 0.377 implying that for every unit increase in the ratio of WCIP, the level of conservativeness increases, and the return on assets of the company increases by 0.377 units. The positive coefficient contradicts the traditional theory where conservative policy is expected to improve liquidity at the expense of profitability. It implies that as TCA increases the level of aggressiveness decreases while ROA increases. This is similar to the study by Al Subiri (2010), Apuoyo (2010) and Nyabuti & Alala (2014).

For the working capital financing variable (TCL/TA) resulted into statistically insignificant coefficients at 95% confidence level ( $p$ -value=0.976). Even though it is not significant there is a positive relationship between aggressive financing policy and return on assets. The coefficient of 0.117 indicates that if WCFP increases by one unit, the level of aggressiveness increases then it causes an increase by 0.117 units in ROA. This indicates that to be profitable companies should take longer to pay bills. This being consistent with the study by Mulogoli (2015) and the traditional theory of high risk and high returns.

The size variable was statistically insignificant with a coefficient value of 0.1203 and a  $p$ -value of 0.073. This being consistent with the study by Amiri (2014). This means that an increase in size of a company by a unit would translate into an increase in the return on assets by 0.1203 units. This can be due to the advantage of economies of scale large companies enjoy so the resultant cost per unit is minimized. This being consistent with study by Makori & Jagongo (2013) and Javid & Zita (2014).

Financial leverage which was a proportion of total liabilities to total assets was statistically insignificant at 95% confidence level ( $p$ -value=0.188). The value of -0.468 indicates that for every increase in financial leverage by a unit would lead to a decrease in the return on asset by 0.468 units. This implies that highly levered firms would struggle to produce better returns as their debt commitments would reduce their profits (Caffasso, 2011). The constant estimator was not statistically significant at 95% confidence level.

## SUMMARY

The aim of the study was to examine the impact of working capital management policy on the profitability of commercial and service firms listed at the Nairobi Securities exchange. The dependent variable profitability was measured using ROA while the independent variables



included working capital investment policy and working capital financing policy. The control variables included leverage and firm size measured using natural log of total assets. The descriptive results showed that the minimum and maximum ROA for the period were -2.073 and 0.256 with a mean of -0.037 and standard deviation of 0.345 respectively. The minimum and maximum WCIP was 0.129 and 0.880 and an average value and standard deviation of 0.455 and 0.242 correspondingly. WCFP had minimum and maximum values of 0.121 and 1.286, means and standard deviations of 0.362 and 0.190 respectively. The minimum values of size and leverage were 5.581 and 0.266 while the maximum values were 8.26 and 1.419 respectively whereas the mean values are 6.749 and 0.5056 respectively. The study model yielded a coefficient of determination (0.2718) which indicated that 27.2% of the variation in profitability was explained by the study variables while 72.5% was explained by other factors outside the model. The correlation coefficient ( $R=0.5169$ ) indicated a moderate relationship between working capital management and profitability of commercial and services firms. The regression results revealed that the model was appropriate since the p-value ( $0.00113 < 0.05$ ) hence fit to explain the effect of working capital management on the profitability of commercial and service firms listed at the Nairobi securities exchange. The regression results established a positive insignificant relationship between WCFP, WCIP and SIZE with profitability and a negative insignificant relationship between LVRG and profitability of commercial and service firms listed at the NSE

## CONCLUSION

Working capital management has two categories: conservative and Aggressive. Conservative investment strategy in working capital management causes the increase of liquidity. In implementing conservative policies, the risk of the inability to pay maturing obligations are minimized. In an aggressive strategy management with the lowest current asset, try to take maximum advantage from current debts and long term assets so as to improve profitability. This study investigated the relationship between aggressive/conservative investment policy, aggressive/conservative financing policy and profitability in the commercial and service sector firms listed at the NSE. The results indicated that none of the determinants tested in this study had a significant influence on financial performance. All of the variables with an exception of leverage had a positive effect on performance as measured by ROA. Hence this study concludes that the variables are not the major determinants of performance in the commercial and service sector.

## **RECOMMENDATIONS FOR POLICY AND PRACTICE**

In an attempt to take advantage of the opportunities arising from the relationship between working capital management policy decisions and the profitability of the commercial and service sector firms in Kenya, the study provides these recommendations:

The current assets should be sufficiently in excess of current liabilities to act as buffer for commitments that arise (Al-Shubiri, 2011) so companies should invest more in current assets. This is due to the fact that most of the companies that used aggressive investment strategy exhibited negative ROA. Current liabilities should be maintained at low levels than current assets (conservative financing) this is due to the fact that companies that used conservative financing performed better than the aggressive ones. Companies should always ensure that net working capital is always positive.

Even though the study found a positive relationship between aggressive financing policy and return on assets previous studies found a positive relation between financial distress and aggressive financing policy. Therefore, companies in the commercial and service sector listed at the NSE need to exercise caution in the management of aggressive financing so as to reduce the level of distress brought about by increased levels of debt.

Since financial leverage exhibited negative relationship with financial performance (ROA) companies in this sector should always strive to raise finances using equity which is a cheaper source of finance than long term debt. This being consistent with the study of Taani (2012) and Walker's theory first preposition.

## **LIMITATIONS OF THE STUDY**

The study targeted the eleven commercial and service sector firms listed at the Nairobi Securities Exchange as at December 2016. Nevertheless, Atlas Development and support services which has been suspended from trading and Nairobi Business ventures, having entered the market within the period of study did not have full data over the study period. They were therefore, removed from the target sample in order to avoid distortion of information remaining with nine companies. More so the study period was limited to five years.

The study focused on working capital management of commercial and service sector firms listed at the NSE so the study findings may not be generalized to other firm listed at the NSE. The study cannot be applied to other firms in this sector not listed at the NSE.

## **SCOPE FOR FURTHER RESEARCH**

Despite the presence of numerous studies on WCM it still remains a wide research area. Since the relationship between working capital management policies and profitability was statistically

insignificant further research can be done on the specific components of working capital to establish the specific factors that affect profitability in the commercial and service sector.

Other measures of performance such as Tobin-q, Earnings per share and Return on Equity can be used to determine the relationship between WCM policies and profitability in the commercial and service sector.

This study focused on working capital management policy and profitability. Thus additional research can be carried out on the effect of working capital management policies on commercial and service sector companies not listed at the NSE. A research study can also be done on companies operating in the financial sector only.

Research can be conducted to study the effect of working capital management policies, liquidity risk and corporate profitability in the commercial and service sector companies. Research can also be conducted to probe the relationship between working capital management policies, CEO characteristics and financial performance.

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## APPENDICES

### Appendix 1: Listed companies at the NSE Commercial and service sector as at 31 December 2016

1. Express Kenya Ltd
2. Kenya Airways
3. Nation Media Group Ltd
4. Standard Group Ltd

5. TPS East Africa(Serena) Ltd
6. Scan Group Ltd
7. Uchumi Supermarket Ltd
8. Longhorn Publishers Ltd
9. Atlas Development and Support Services
10. Deacons (East Africa)Plc
11. Nairobi Business Ventures Ltd

Source: www.nse.co.ke (2016)

### Appendix 2: List of Sampled Firms

1. Deacons Kenya Limited
2. Express Kenya Limited
3. Kenya Airways Limited
4. Longhorn Publishers
5. Nation Media Group
6. Standard Group Limited
7. Scan Group Limited
8. Uchumi Supermarket
9. TPS East African Limited.

### Appendix 3: Heteroscedasticity

White's test for  $H_0$ : homoskedasticity

against  $H_a$ : unrestricted heteroskedasticity

$\chi^2(14) = 16.97$

Prob >  $\chi^2 = 0.2577$

Cameron & Trivedi's decomposition of IM-test

Source	chi2	df	p
Heteroskedasticity	16.97	14	0.2577
Skewness	7.10	4	0.1305
Kurtosis	1.16	1	0.2813
Total	25.24	19	0.1529

