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Effects of Working Capital Management on Financial Performance of Listed Commercial and Services Firms at Nairobi Securities Exchange, Kenya

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Abstract: **The study soughtto examine the effects of working capital management on financial performance of commercial and services firms listed in the NSE. Specifically, the study seeks to evaluate the relationship between accounts payable, accounts receivable, cash management, inventory management and financial performance of commercial and services firms. The study employed correlational research design. The study utilized secondary panel data collected using data collection sheets. The data covered a period of 7 years i.e. from 2010-2016. The target population consisted of 11 firms listed under commercial and services category in the NSE as at 31st December 2017. Panel data model was used for data processing and analysis. The collected panel data was analyzed using STATA 14. The study employed descriptive statistics to come up with mean, standard deviation, minimum and maximum values. Under quantitative analysis, Karl's Pearson correlation, regression and Anova analysis were used. The study findings established a positive relationship between average payables period and financial performance, a negative relationship between average collection period and financial performance, negative relationship between inventory conversion period and financial performance, and a statistically significant effect of cash management denoted by cash conversion cycle on financial performance measured by ROA. The study recommended that the management of commercial and services companies to delay payment of creditors in as much as possible reduce accounts receivables period as much as possible, minimize the inventory conversion period by coming up with relevant policies and reduce cash conversion cycle period as possible.**

Keywords: **Deposit taking Savings and credit cooperatives, financial performance and Investment Portfolio.**

I. INTRODUCTION

In the present global environment, firms have been left with no option but to find ways of cutting down the costs of operation. This way, the companies can remain competitive and financially healthy (Magwiro, 2014). Working capital management decisions remain key in ensuring survival of a company. Efficient working capital management therefore is a key component of the overall corporate strategy to enhance shareholders wealth. (Deloof, 2003) asserted that most companies plunge into financial distress mainly as result of failure to meet their working capital requirements. The subject of working capital management gained popularity after the financial crisis and recession experienced in 2008-2009. The main focus was to determine the value of investments that firms dedicate in short-term assets and the resources used to settle financial obligations maturing under one year (Haq & Zaheer, 2011). Arif, Jawaid and Khan (2012) described working capital management as the management of current assets and liabilities, and how the current assets are financed. It is the financing, investment and control of the net assets within the policy guidelines of a company. Every business requires working capital to thrive. This is because working capital is needed to finance all the daily activities of a firm. Working capital decisions remain a key decision area to a firm since it has a direct impact on liquidity, solvency and financial performance (Alala & Nyabuti, 2014). Gupta (2002) postulated that WCM provide important insights to the company on the level of liquidity needed to operate efficiently. Deloof (2003) asserts that the main objective of working

capital management is to ensure a firm has sufficient cash flow for payment of not only short term debt but also operational expenses. He further contends that WCM involves decisions involving the management of account payables, account receivables, a certain level of inventories and investment of accessible cash. Padachi (2006) observed that a well calculated and employed working capital management can add positively to the firm's performance. However for a company to realize the gains of effective WCM, an optimal level of working capital components should be maintained. Optimization of working capital involves keeping the working capital requirements at their minimum while maximizing possible revenues (Ganesan, 2007). If a firm prudently minimizes the amount of investment in current assets, the resulting resources can be used to finance capital expenditure and new projects thereby. This would eventually create growth of the firm leading to shareholders wealth maximization (Nteere, 2014). However, excessive investment in current assets should be avoided since tying the funds in current assets would impair financial performance. Under-investment is neither desirable as it may lead to financial distress (Nteere, 2014). A rise in working capital requirements due to increased activity of the firm should met by appropriate financial arrangement. Surplus funds should be invested in short-term securities (Pandey, 2008).

1.1 Statement of the Problem

Firms that have prudent working capital management enjoy smooth operations as they settle maturing short term obligations as they fall due (Maundu, 2014). This notion is premised on the fact that having too much capital signifies inefficiency while having too little cash in hand signifies that the business may not be able to settle financial obligations (Githinji, 2013). Firms with inadequate working capital cannot engage in capital expenditures either. Firms in the commercial and services category in the NSE have reported negative working capital implying that the firms have faced challenges in financing their short term financial obligations. For example, Uchumi Supermarkets Ltd reported a negative net working capital of Ksh. -3.4 million in 2015, Ksh. Kenya Airways Ltd reported a negative net working capital of Ksh. -46.2million in 2016, Ksh. -41.7 million in 2015. Deacons Plc reported a negative net working capital of Ksh. -5.4 million in 2014 and. Express Kenya reported a negative net working capital of Ksh. -16.9 million in 2016. Not being able to maintain a satisfactory level of working capital, a business is likely to become insolvent and thus plunge into business failure. Further, various firms under commercial and services sector in the NSE have recorded dismal performance as reflected in their respective financial statements. Despite firms in commercial and services category in the NSE depicting working capital problems and poor financial performance, few studies have been carried out to analyse whether there exists a relationship between their working capital practices and financial performance. This study seeks to fill this gap. Moreover, scholars who have studied working capital management have conflicting findings on the relationship between working capital components and profitability/performance. Nasieku and Waema (2016), Wanguu (2015), Makori and Jagongo (2013) found a positive relationship between Payment period and profitability while Falope and Ajilore (2009) found a negative relationship instead. Nasieku and Waema (2016), Omesa et al. (2013) found a negative relationship between cash conversion cycle and profitability whereas Nyaboke (2017) found a positive relationship. Zariyawati et al. (2012) found a positive relationship between inventory conversion period and profitability while Kulkanya (2012) found a negative relationship instead. Omesa et al. (2013), Walter et al. (2014) found a positive relationship between receivable collection period and performance while Makori and Jagongo (2013), Kulkanya (2012), Nasieku and Waema (2016) found a negative relationship instead. Therefore further studies needs to be carried out to establish components of working capital affecting profitability positively or negatively. This study therefore was carried to address these gaps.

1.2 Objective of the Study

To determine the effects of working capital management on the financial performance of commercial and services firms listed in the Nairobi Securities Exchange. Specific objectives included:

i. To determine the effect of accounts payable on financial performance of commercial and services firms listed in the Nairobi Securities exchange
ii. To assess the effect of accounts receivable on financial performance of commercial and services firms listed in the Nairobi Securities exchange.
iii. To examine the effect of inventory management on financial performance of commercial and services firms listed in the Nairobi Securities exchange.
iv. To establish the effect of cash management financial performance of commercial and services firms listed in the Nairobi Securities exchange.

1.3 Research Hypotheses

In conducting the study the following hypothesis were tested

H_{01}: Accounts payable do not influence financial performance of commercial and services firms listed in the NSE.

H_{02}: Accounts receivable do not influence financial performance of commercial and services firms listed in the NSE.

H_{03}: Inventory management do not influence financial performance of commercial and services firms listed in the NSE.

H_{04}: Cash management do not influence financial performance of commercial and services firms listed in the NSE.

II. LITERATURE REVIEW

2.1 Theoretical Review

Trade Credit Theory: The theory was introduced by mills (1959). Schwartz (1974) is credited with advancing the theory. Trade credit theory asserts that trade credit is a cheaper substitute to bank credit. Trade credit generally refers to the payment time extended by the supplier to the customer for the goods purchased. Trade credit when extended to the customer by the supplier forms accounts receivable while it becomes an accounts payable when received by the customer (Nyamweno & Olweny, 2014). The amount of trade credit in a single transaction is equal to both the supplier and customer. Under trade credit agreement, the suppliers have a monitoring advantage over lenders on the customer thus obtaining key information. Lenders would have to incur costs to obtain such information (Burkart & Ellingsen, 2004). Trade credit generally runs for a short-term period i.e.30 to 60 days. Cunat and Garcia-Annendini (2012) asserted that trade credit is short-term debt as it involves delayed payment of the purchased goods. Through such delayed payments, a firm is able to enjoy a flexible source of financing (Gachira et al., 2014). On the contrary, trade credit curtails the firm from enjoying discounts that come with prompt payment for the purchased goods. This reduces the ability of a firm to bring the cost of production down. Trade credit theory postulates that a flexible trade credit policy with an interest on receivables may help a firm shore up its sales. The major advantage of trade credit is that it enables companies to finance the procurement of inputs (accounts payable) and extend financing to their customers (Accounts receivable) regardless of whether a firm is facing credit constraints. Cunat and Garcia-Appendini (2012) asserted that trade credit is key in reducing the costs attributed to cash management. Trade credit is an important aspect of a company as it affects the level of investment in current assets and thus the financial performance of company. The theory is relevant to this particular study as it emphasizes on how a firm can increase liquidity and therefore financial performance by extending/receiving a prudent trade credit contracts to/from its debtors/creditors. A prudent trade credit contract with debtors would reduce the number of days the firm takes to collect payments from debtors. Further, a well though-out trade credit contract with the suppliers would seek to increase days of account payables without hurting the relationship with the supplier.

Cash Conversion Cycle Theory

The theory was developed by Gitman (1974). Cash conversion cycle is the duration of time cash is tied up in accounts receivables and inventory. The theory utilizes operating cycle by summing up accounts receivable and inventory days less account payables days. Gitman (1974) asserted that cash conversion cycle can be used to determine the amount of cash needed for any sales level. Padachi (2006) suggested that cash conversion cycle is a measure of working capital as it shows the time lag between expenditure for the purchase of raw materials and the collection of sales of finished goods. It's desirable for a firm to have a shorter CCC as fewer resources will be needed by the company. Brigham and Houston (2007) asserted that this can be achieved by reducing the inventory turnover periods and accounts receivables collection period. Deloof (2003) postulated that the longer the time lag, the larger the investment in working capital. Cash conversion cycle can be negative; for instance, if the company has a strong market position thereby dictating purchasing terms to suppliers (Brennan et al., 2003).The theory asserts that day-to-day management of a firm's short term assets and liabilities plays an important role in the success of the firm given that firms with growing long term prospects and healthy bottom lines cannot remain solvent without good liquidity management (Sharma & Kumar, 2011). This theory is relevant to the study as it seeks to explain how the components of working capital management i.e. accounts receivables, cash conversion cycle, inventory turnover period and accounts payables interact to influence firm liquidity and financial performance. Further, firms under commercial and services category in the NSE need to shorten their CCC so as to increase the shareholder wealth. This is because higher CCC will lower the returns as a result of lengthened duration that cash is trapped in working capital.

2.2 Empirical Review

Accounts Payable and Financial Performance: Deloof (2003) studied the relationship between working capital management and profitability of Belgian Firms. The study employed a sample of 1,009 large Belgian commercial and service firms for a period of 1992-1996. By using correlation and regression tests, he found a significant negative relationship between gross operating income and the number of days of accounts payable. Deloof (2003) findings are inconsistent with the established view that for firms to increase profitability, creditor's payments should be delayed as long as possible so long as it does not dent the good relationship between the firm and supplier. Longer average payment period implies an efficient use of credit facilities. Mathuva (2009) in the study "the influence of working capital management components on corporate profitability: a survey on Kenyan listed firms" established that average payment period has a positive relationship with profitability. The positive relationship suggests that an increase in the number of day's accounts payable by 1 day is associated with an increase in profitability. The findings are in conformity with the accepted view a company can increase its performance by delaying payment to creditors. Accounts payable is a form of short-term financing and thus a company need not to borrow from the market if it can utilize the facility well. This would eventually lead to lower financing costs which would improve performance. Tirngo (2013) examined impact of working capital management on profitability of micro and small enterprises in Ethiopia for the case of Bahir Dar City Administration. The study had taken a sample of 67 micro and small enterprises. Data for this study was collected from the financial statements of the enterprises listed on Bahir Dar city micro and small enterprises agency for the year 2011.The study applied Pearson's correlation and OLS regression with a cross sectional analysis. The findings showed that there is a strong positive relationship between number of day's accounts payable and enterprises profitability. The findings are consistent with the accepted view that longer creditor payment period improves performance. However, in delaying the payments a firm may dent its reputation and goodwill from suppliers.

Accounts Receivable and Financial Performance: Padachi (2006) examined the trends in WCM and its impact on firms' performance. The trend in working capital needs and profitability of firms were examined to identify the causes for any significant differences between the industries. The dependent variable, return on total assets was used as a measure of profitability and the relation between WCM and corporate profitability was investigated for a sample of 58 small manufacturing firms, using panel data analysis for the period 1998 – 2003. The regression results showed that high investment in receivables is associated with lower profitability. The conventional view is that a company that has high investment in receivables may face liquidity problems if it does not devise efficient ways of collecting outstanding debts from debtors. This may lead to poor financial performance. Falope and Ajilore (2009) used a sample of 50 Nigerian quoted commercial and services firms for the period 1996 -2005. Their study utilized panel data econometrics in a pooled regression, where time-series and cross-sectional observations were combined and estimated. They found a significant negative relationship between net operating profitability and the average collection period. The findings are in line with the established view that a shorter collection period improves the cash cycle which in-turn makes a company more liquid and solvent leading to superior financial performance. Further, short collection period is an indicator of better utilization credit facilities extended to customers. Mathuva (2010) examined the influence of working capital management components on corporate profitability by using a sample of 30 firms listed on the Nairobi Stock Exchange (NSE) for the periods 1993 to 2008. The key findings of his study were that; there exists a highly significant negative relationship between the time it takes for firms to collect cash from their customers (accounts collection period) and profitability. The findings are in harmony with the accepted view that a short collection period increases profitability. It's imperative to note that a longer collection period leads certain costs such as; bad debts, provision for bad and doubtful debts and costs of monitoring a debtor. Such costs could lead to poor performance. Akoto et al. (2013) examined the relationship between working capital management practices and profitability of listed manufacturing firms in Ghana. The study used secondary data collected from all the 13 listed manufacturing firms in Ghana covering the period from 2005-2009. They found a significant negative relationship between profitability and accounts receivable days. The findings are consistent with accepted view that a shorter collection period increases liquidity of a business. Improved liquidity not only enables company to foot maturing short term financial obligations but also enable a company to invest in profitable opportunities.

Inventory Management and Financial Performance: Raheman and Nasr (2007) investigated the relationship between working capital management and profitability of Pakistani firms. They selected a sample of 94 Pakistani firms listed on Karachi Stock Exchange for a period of six years from 1999 - 2004 and found a strong negative relationship between inventory management and profitability of the firms. The findings of Raheman and Nasr (2007) are in conformity with the conventional view that for firms to increase their performance, inventory should be turned over in the shortest time

possible. A longer inventory conversion period is unfavorable as it bores unwanted costs to the company. Such costs include; costs of obsolescence, warehouse costs, opportunity cost, cost of spoilage and cost of pilferage. Vural et al. (2012) conducted a study on the effect of working capital on firm's performance. The study used a sample of 75 manufacturing firms listed on Istanbul Stock Exchange Market for the period 2002-2009. By using Dynamic panel data analysis, the study did not find any relationship between the number of days of inventory and profitability. The established and accepted view is that a short inventory conversion period is favorable as it implies the company is making sales quickly. The findings are against the conventional view that for a firm to increase profitability, restocking rate should be high. A high restocking rate can only be guaranteed by a shorter inventory conversion period. Zariyawati et al. (2012) empirically studied the relationship between working capital management and corporate performance using a case of Malaysia for the period 2003–2008. Using the regression and correlation analysis methods, the study found out that inventory management was positively correlated with firm performance. The findings are in contrast with conventional view as positive correlation depicts increasing corporate performance as a result of increasing inventory conversion period. Makori and Jagongo (2013) studied the relationship between Working Capital Management and Profitability of manufacturing and construction Firms Listed on Nairobi Securities Exchange, for the period 2003 to 2012. Pearson's correlation and Ordinary Least Squares regression models were used to establish the relationship between working capital management and firm's profitability. The findings were that there is a negative relationship between profitability and inventory conversion period. This findings are in line with the notion that stock sitting on shelves for long periods of time ties up money which may reduce the profitability of firms.

Cash Management and Financial Performance: Lazaridis and Tryfonidis (2006) investigated the relationship between corporate profitability, the cash management and its components. They used a sample of 131 companies listed in the Athens Stock Exchange for the period of 2001-2004. The research findings showed negative relationship between cash management and profitability. They concluded that companies can create more profit by handling correctly the cash management and keeping it to an optimum level. The findings are in conformity with the view that efficient cash management is critical to a business as it ensures that there is sufficient cash to finance daily business operations, ensures there is enough funds to settle financial obligations as they arise, assists in planning capital expenditure projects and enables a business to negotiate favorable financing terms with lenders. Raheman and Nasr (2007) investigated the relationship between working capital management and profitability of Pakistani firms. They selected a sample of 94 Pakistani firms listed on Karachi Stock Exchange for a period of six years from 1999 - 2004 and found a strong negative relationship between Cash conversion cycle and profitability of the firms. They established that as the cash conversion cycle increases, it leads to decreasing profitability of the firm and managers can create a positive value for the shareholders by reducing the cash conversion cycle to a possible minimum level. These findings are in conformity with the accepted view that a short cash conversion cycle is desirable. The shorter the cycle, the less time capital/resources is tied up in the business process and thus the better the company bottom line.Falope and Ajilore (2009) used a sample of 50 Nigerian quoted commercial and services firms for the period 1996-2005. Their study utilized panel data econometrics in a pooled regression, where time-series and cross-sectional observations were combined and estimated. They found a significant negative relationship between net operating profitability and cash conversion cycle for a sample of fifty Nigerian firms listed on the Nigerian Stock Exchange. Falope and Ajilore (2009) findings are acceptable since a short cash conversion cycle implies availability of resources to fund firms operations. Further, a short cash conversion cycle is desirable as it is an indication that a company is efficiently managing operations in-terms of accounts receivables, accounts payables and inventory turnover. Waithaka (2012) examined the relationship between working capital management and financial performance of agricultural entities in Kenya. The study adopted a Correlational research design which attempted to explore the relationship between working capital management and financial performance. The target population consisted of the 7 agricultural companies listed at the Nairobi Securities Exchange. The data was analyzed using both descriptive and inferential statistics. The study found that, financial performance was positively related to efficiency of cash management (ECM) at 0.01 significance level. Waithaka (2012) findings are in conformity with the general view that an efficient cash management strategy ensures enough resources are available for a business to fund its operations thereby increasing the liquidity and solvency of a company.

III. METHODOLOGY

3.1 Research Design ,Target Population And Sampling

The study employed correlational research design. The study employed correlational research design because it seeks to make predictions by evaluating existence of relationships between the variables. Correlational research design is most

suitable for this particular study as it not only aids in establishing association between working capital components and financial performance but also helps in identifying, describing and analyzing the variables affecting performance (Cooper & Schindler 2011). The target population for this study was 11 firms listed in the commercial and services category in the NSE as at 31st December 2017.The study utilized a census since the research was done on all firms under category of commercial and services. The advantage of a census is that it eliminates errors associated with sampling (Saunders *et al.*, 2009). Use of a census in this study is informed by the availability of the necessary secondary data.

3.2 Research Instruments and data collection

The study utilized secondary data. Secondary data is defined as data collected by someone other than the user (Kelly, 2005). The secondary data was sourced from the published annual financial statements of the firms in the category of commercial and services category. The audited annual financial statements were specifically be obtained from respective firm's websites, NSE and Capital Market Authority. The data covered a period of 7 years i.e. from 2010-2016. The benefit of secondary data is that much of background work has already been done thereby giving a pre-established degree of reliability. Data collection schedules were used to collect secondary data. Crucial data obtained from audited annual financial statements were recorded in the data collection schedules for the purpose of subsequent analysis.

3.3 Data Processing and Analysis

Data analysis for this study was guided by the study objectives. The collected panel data was subjected to computerized analysis using excel spreadsheets and STATA 14. STATA has been widely used by scholars to analyze panel data. Musau (2015), Garg and Gumbochuma (2015), Hunyh (2012) utilized STATA software in their respective panel data analysis.

Descriptive and quantitative analysis were utilized in the study. Descriptive analysis was employed to come up with mean and standard deviation. The study employed quantitative analysis using multiple regression, Anova and correlation analysis to depict the relationship between WCM and financial performance. Karl Pearson Correlation coefficient will show the strength of association between the variables under study. Scholars have employed Pearson's correlation coefficient in recent studies. For instance, Kimeli (2014), Githinji (2015) and Wanguu (2015). Multiple regression analysis helped determine the causal relationship existing between the dependent variable and independent variables. Overtime, scholars have employed multiple regression analysis in their studies. They include; Kimeli (2014), Owino (2013), Owele (2014), Kimeli (2014), Wanguu (2015), Kung'u (2015), Githinji (2015). Multiple regression analysis was conducted to evaluate how well the independent variables are significantly related to financial performance. The regression model used to determine the effect of levels of working capital on performance is as follows

$$ROA_{it} = \beta_0 + \beta_1 APP_{it} + \beta_2 ACP_{it} + \beta_3 ICP_{it} + \beta_4 CCC_{it} + \mu_{it} \quad \ldots\ldots(1)$$

Where;

β_0 = Constant, Bi = coefficient of dependent variable which measures the changes in Y with a unit change working capital I, ROA=Return on Assets, APP=Average Payment Period, ACP=Average Conversion Period

ICP= Inventory Conversion Period, CCC=Cash Conversion Cycle , μ = Error Term, i = The 11 listed commercial and services firms from the 1st to the 11th and t = time period in years, starting from year 1 to year 7 i.e. 2010-2016

3.4 Diagnostic Tests

Panel data was subjected to diagnostic tests to evaluate conformity with multiple regression model assumptions. This ensured validity of the results. The study employed normality, heteroscedasticity, multicollinearity, serial correlation, random or fixed effects and panel unit root diagnostic tests. Normality Test: The study employed Shapiro-Wilk test to test normality. The test is most appropriate for a sample size of 50 or less. The choice of this test is informed by the small number of sample to be studied. Data is normal if the significance values for Shapiro-Wilk tests are greater than P-Value statistic test of 0.05. A value below 0.05 depicts the data is not normally distributed. Heteroscedasticity Test: The study will utilize Glejser test by using the regression residual value of the independent variables. There is no heteroskedasticity if the significance values are greater than the P-value statistics test of 0.05. Multicollinearity: The study employed Variance Inflation Factor (VIF) to test the existence of multicollinearity. If VIF is less than 10, then there is no existence of multicollinearity (Gujarati, 2003). Serial Correlation: A panel data has no serial correlation if P value is greater than the 5% level of significance.Random or Fixed Effects: The study employed Hausman test to determine whether to use random effects model or fixed effects model. Panel Unit Root Test: The study will employ Augmented Dickey Fuller (ADF) unit root test to evaluate the availability of unit roots in the data. If P-Value is greater than 5% level of significance, it implies the data is not stationary i.e. availability of unit roots.

IV. RESULTS AND DISCUSSIONS

4.1 Pilot Study and Response Rate

The study targeted to collect data from a census of the 11 listed commercial and service firms in Nairobi Stock Exchange. The study envisaged to collect data for seven years starting 2010-2016 for each company giving seven observations per company. The study therefore was to realise 77 observations. However, during data collection, two firms were dropped from the analysis after they lacked all relevant data for analysis. The data collection and analysis was therefore based on a total of nine listed Commercial and Services firms which were used in the study giving 63 observations and response rate of 81.81%. The findings were analysed beginning with descriptive statistical analysis followed by quantitative statistical analysis.

4.2 Descriptive Analysis

initial exploration of the data using simple descriptive tools was provided to describe and summarize the data generated for the study. This section provides the descriptive statistics as per the objectives of the study. That is effect of cash conversion cycle, accounts receivables period, accounts payables period and inventory turnover period on financial performance of listed Commercial and Services Firms in Kenya.

Table 4. 1: Summary of Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
APP	63	124.37	112.79	0	582.58
ACP	63	77.76	57.65	8.61	257.15
ICP	63	82.26	84.96	0	307.25
CCC	63	36.82	133.30	-326.76	309.30
ROA	63	.005	.45	-1.96	2.12

Accounts Payables: The research sought to establish the central tendency and distribution of accounts payables among the listed commercial and service companies in Kenya. Accounts payables was measured using accounts payables period. The results are presented in table 1. The mean accounts payables period was 124.37 days suggesting that the average accounts payable period for the listed commercial and services firms studied was about 124 days. A similar study carried out by Wanguu (2015) found out that commercial and services firms on average pay creditors after 132 days. The standard deviation for the accounts payables period was 112.79 demonstrating that out of the listed commercial and services firms listed in Kenya, accounts payables period was spread around the mean with about 113 days. The minimum accounts payables period was 0 days and the maximum accounts payables was 582.58 days.

Accounts Receivables: The researcher sought to establish the central tendency and distribution of accounts receivables among the listed commercial and service firms in Kenya. Accounts receivables was measured by accounts receivables period .The results are presented in table 1. The mean accounts receivables period was 77.76 suggesting that the average accounts receivables period for the 11 listed commercial and service firms studied was about 78 days. Wanguu (2015) established that it takes 60 days for firms under category of commercial and services to receive accounts from creditors. The standard deviation for the accounts receivables was 57.65 demonstrating that the listed commercial and service firms studied, accounts receivables period was spreads around the mean with about 58 days. The minimum accounts receivables period was 8.61 days and the maximum accounts receivables period was 257.15 days.

Inventory Management: The study also sought to examine the central tendency and distribution of inventory turnover among the 10 listed commercial and service companies in Kenya. The results are presented in table 1. The mean inventory turnover period was 82.26 suggesting that the average inventory turnover period for the firms studied was about 82 days. The findings were in congruence with the findings of Wanguu (2015) who found a mean value of 81.67 on his study on effects of working capital management on performance of commercial and services firms. The standard deviation for the inventory turnover period was 84.96 demonstrating that out of the listed commercial and services firms in Kenya, inventory turnover period was spreads around the mean with about 85 days. The minimum and maximum inventory turnover period was 0.0 days and 307.25 days respectively.

Cash Conversion Cycle : The researcher sought to establish the central tendency and distribution of cash conversion cycle period among the listed commercial and service firms in Kenya. The cash conversion cycle measures time (in days) that a company takes to convert resource input into cash flows. The results are presented in table 1. The mean Cash conversion cycle period was 36.82 suggesting that the average cash conversion cycle for the listed commercial and service firms was about 37 days.The standard deviation for cash conversion period was 133.30 demonstrating that out of the listed Commercial and Services Firms, cash conversion cycle period was spread around the mean with about 133 days. The minimum cash conversion period was -326.76 days and the maximum cash conversion cycle period was 309.30 days.

Financial Performance ; Finally, ROA was used as a measure of financial performance .The results are presented in table 4.1. The mean ROA was 0.005 suggesting that the average ROA for the listed commercial and service Firms studied was about 0.5 %. The standard deviation for the ROA was 0.45 demonstrating that out of the listed commercial and services firms in Kenya, the ROA was spread around the mean with about 45 %. The minimum value for ROA was -196 % while the maximum value of ROA was 212%. The negative minimum value illustrated that some firms in category of commercial and services are performing dismally. Awunya (2015) found a minimum value of -2.073 on her study on effect of WCM on financial performance of manufacturing companies.

4.3 Correlation Analysis

In this subsection the correlation analysis using the Pearson Product Moment Correlation was made to first determine the degree of multicollinearity between the independent variable and also show the degree of their association with the dependent variable resulting correlation matrix given in Table 2. The study sought to establish the Pairwise correlation between variables used in the study. Pairwise Pearson correlation coefficients were calculated at 0.05 level of significance. There was positive statistically significant correlation between accounts payable and ROA ($r = 0.072$, $p = 0.0031$ and $\alpha = 0.05$). This findings are consistent with Nasieku and Waema (2016) findings that there exists a significant relationship between accounts payable and financial performance implying that an increase in average payment period is assosiated with increase in financial performance. Accounts receivables was positively correlated with Financial Performance ($r = 0.0831$, $p = 0.528$ and $\alpha = 0.05$), however the relationship was not statistically significant. Nasieku and waema (2016) had conflicting findings that there exitsts a negative relationship between accounts receivable period and financial performance. The relationship between Inventory conversion period and ROA was negative and statistically insignificant ($r = -0.1411$, $p = 0.2823$ and $\alpha = 0.05$). The findings agree with the findings of Nasieku and Waema (2016) on their study on the effects of working capital management and financial performance of listed manufacturing firms. There was a statistically significant negative correlation between cash conversion cycle period and ROA ($r = -0.3039^*$ $p = 0.0183$ and $\alpha = 0.05$). Nasieku and Waema (2016) had similar findings that there exists a statistically significant negative correlation between cash conversion cycle period and financial performance implying that an in increase in CCC is associated with increase in financial performance.

Table 2: Pairwise Pearson Correlation

		APP	ACP	ICP	CCC	ROA
APP	Coefficient	1.0000				
	Significance					
ACP	Coefficient	0.3811*	1.0000			
	Significance	0.0027				
ICP	Coefficient	-0.1145	-0.0749	1.0000		
	Significance	0.3839	0.5693			
CCC	Coefficient	-0.6839*	0.0869	0.6811*	1.0000	
	Significance	0.0000	0.5089	0.0000		
ROA	Coefficient	0.3755*	0.0831	-0.1411	-0.3039*	1.0000
	Significance	0.0031	0.528	0.2823	0.0183	

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

Independent variables: Cash conversion cycle (CCC), Accounts Payables Period (ARP), Accounts receivables Period (APP), Inventory conversion Period (ICP) and **Dependent variable**: Return on Assets (ROA)

4.4 Diagnostic Test

Normality test: From table 4.3, one rejects the null hypothesis H_0 that Cash conversion Cycle (p = .00651), accounts receivables (p = .00009), accounts payables (p = .000) and Inventory conversion (p = .00001) follow normal distribution .This owes to p-values being lower than 0.05. The data seems not normal since the sample size was small however, this cannot affect the estimation of coefficient of explanatory variables used in the study.

Heteroscedasticity test: as lack constant error variance. The study utilized Glejser test by using the regression residual value of the independent variables. The study null hypothesis is that the data exhibits homoscedasticity. The results in show that p value was greater than chi2 hence the null hypothesis that data has homoscedasticity is rejected and the alternative hypothesis that the data has heteroscedasticity is accepted.

Multicolliniarity test: The study will employ Variance Inflation Factor (VIF) to test the existence of multicollinearity. Results showed that all the variables except CCC had a variance inflation factors (VIF) of less than 5 and overall VIF of 4.23. These results show that multicollinearity problem was very low.

Serial Correlation: The study employed Augmented Dickey Fuller (ADF) unit root test to evaluate the availability of unit roots in the data. The test results showed that the value of P-Values is greater than 5% level of significance thus the null hypothesis is rejected and alternative hypothesis that the data has unit roots is accepted. Since the data has unit roots, the study used the variables in their first difference instead of levels to curtail the results from being spurious (Gujarati, 2003).

Random Effect of Fixed effect Model: The study employed Hausman test to determine whether to use random effects model or fixed effects model. Given that the value of P-Value (p =0.1772) was greater than 5% level of significance, the null hypothesis is rejected and alternative model accepted. This means that the random effects model was the appropriate model to explain the relationship between WCM and financial performance.

4.5 Regression Analysis

Regression analysis was multiple in nature as there were four independent variables. The independent variables were Accounts payable as denoted by accounts payable period, accounts receivable as denoted by accounts receivable period, inventory management as denoted by inventory conversion period and cash management as denoted by cash conversion cycle. The dependent variable was financial performance measured by ROA .Multiple regression analysis involved calculation of coefficient of determination, Analysis of Variances (ANOVA) and regression coefficients.

Table 3: Summary of GLS Regression Results

xtreg ROA APP ICP ACP CCC		
Random-effects GLS regression	Number of obs =	63
Group variable: ID	Number of groups =	9
R-sq:	Obs per group:	
within = 0.4124	min =	7
between = 0.3104	avg =	7
overall = 0.3847	max =	7
	Wald chi2(4) =	36.63
corr(u_i, X) = 0 (assumed)	Prob > chi2 =	0

ROA	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
APP	.0208552	.0038313	5.44	0.000	.0133461	0.0283644
ICP	-.0215107	.0041261	-5.21	0.000	-.0295976	-0.0134237
ACP	-.0223782	.0042223	-5.30	0.000	-.0306537	-0.0141027
CCC	.0213325	.0041652	5.12	0.000	.0131688	0.0294962
_cons	.1365586	.128238	1.06	0.287	-.1147833	0.3879004

Coefficient of Determination (R^2) and ANOVA : Tables 3 indicate that the model explains only 38.47% of the variations in financial performance (ROA) as shown by the coefficient of determination (R^2) value of 0.3847 hence 61.53 % variations in Financial performance (ROA) is explained by other factors not included in the model. It is therefore clear

that working capital explains only 38.47 % variations in profitability. Additionally, according to table 3 the overall significance of the model was 0.000 with an F value of 36.63. The level of significance was lower than 0.05 and this means that working capital management do show statistically significant effect on financial performance (ROA).

Coefficients of Independent Variables: Table 3 further shows the coefficients of independent variables (cash conversion cycle, accounts payable, accounts receivables and inventory conversion and the values of p and values of t .The model was thus estimated as;

$$ROA_{it} = \mathbf{0.136} + \mathbf{0.020}\ APP - \mathbf{0.022}\ ACP - \mathbf{0.021}\ ICP + \mathbf{0.021}\ CCC + \varepsilon_i$$

The estimated model above shows the causal effect relationship between the independent variable working capital management and dependent variable financial performance of listed commercial and service firms in Kenya. The estimated intercept term 0.1365 shows the level of financial performance in terms of ROA when the independent variables are held constant. The coefficients estimates of the model are explained in details in the following discussion. The researcher established that Accounts payables period had a statistically significant effect on financial performance measured by ROA ($\beta 1 = .0208552$, $p = 0.000 < \alpha = 0.05$). Accounts receivables period had a statistically significant effect on financial performance measured by ROA ($\beta 2 = -.0223782$, $p = .000 < \alpha = 0.05$). Cash conversion cycle period had a statistically significant effect on financial performance measured by ROA ($\beta 4 = .0213325$, $p = .000 < \alpha = 0.05$). Inventory Conversion period had a statistically significant effect on financial performance measured by ROA ($\beta 3 = -.0215107$, $p = .000 < \alpha = 0.05$).

V. CONCLUSION

Firstly, study findings from correlation analysis indicated that there was a positive correlation between accounts payables period and financial performance of listed commercial and service firms in Kenya. Additionally regression analysis indicted that accounts payables period had a statistically significant effect on financial performance measured. The study thus concludes that accounts payables period has a major effect on financial performance of listed commercial and service firms in Kenya. This positive correlation could be explained by the fact that by paying creditors as late as possible, the business can invest the funds in other short-term investment opportunities to generate additional revenues. Secondly, since Pearson's correlation indicated that there was a statistically significant negative correlation between accounts receivables and financial performance measured by ROA and regression analysis indicating that accounts receivables had a statistically significant effect on financial performance measured by ROA. Therefore, the study concludes that accounts receivables period has a major effect on financial performance of listed commercial and service companies in Kenya. This negative correlation could be explained by the fact that when it takes longer to collect cash from debtors a business suffers as most funds are tied in doubtful debts hence increased accounts receivables leads to a reductions revenue generation in terms of ROA. Thirdly, study findings from Pearson's correlation analysis indicated that there was a statistically significant negative correlation between inventory conversion period and financial performance of listed commercial and service firms in Kenya. Hypothesis testing also established that inventory conversion period had a statistically significant effect on financial performance measured. Thus, researcher concluded that inventory conversion has a significant effect on financial performance of listed commercial and service firms in Kenya. The negative correlation could be explained by the fact when it takes it takes a longer time to turn inventory into sales, a lot of funds is tied in inventory hence the business cannot meet its debts obligation and invest into new stocks hence any increase in inventory turnover period leads to reduction in revenue in terms of profitability. Finally, Pearson's correlation results indicated that there was a statistically significant negative correlation between cash conversion cycle and financial performance and the rejection of null hypothesis that showed that cash conversion had a statistically significant effect on financial performance of listed Commercial and service firms in Kenya. It can thus be concluded that cash management has a major effect on financial performance of listed commercial and service firms in Kenya. The findings suggests that an increase in cash conversion cycle leads to reduction in Profitability as shown by reducing ROA. Longer cash conversion cycle means that a business takes a longer time to generate cash from sale of goods and services hence such business may not be able to finance new purchases of goods as well as meet debt obligations as they fall due hence profitability is affected negatively.

VI. RECOMMENDATIONS

Firstly, with the conclusion that accounts payable has a major positive effect on financial performance of listed commercial and service firms in Kenya and the rejection of null hypothesis. The study wishes to recommend that the management of commercial and services companies should delay payment of creditors in as much as possible as long as it

does not affect their credit worthiness negatively. The management through the credit management and cash management office should negotiate with suppliers to lengthen the accounts payable period as much as possible. The management should even forego discounts received if the cash can be invested in some short-term investment opportunities to generate more income to the company. Lengthening the accounts receivables period enables a cash trapped company to recover from the liquidity problems. Secondly, with the study concluding in second objective that accounts receivables has a major negative effect on financial performance of listed commercial and service firms in Kenya by rejection of null hypothesis. The study thus recommends to management of listed commercial and services companies in Kenya to reduce accounts receivables period as much as possible .They should find ways of collecting cash from debtors as early as it is practically possible. The top management of the companies should instruct credit management department to come up with a credit policy that ensures that the firm is able to collect cash from debtors on time. They should also reduce the value of bad debts as much as possible.Thirdly , basing on conclusion that inventory conversion period has a significant negative effect on financial performance of listed commercial and service companies in Kenya by rejection of null hypothesis .The study recommends that management of the listed commercial and services companies should continuously work on ways minimising the inventory conversion period by coming up with relevant policies. The top management through the inventory management department should come up with the most efficient inventory management and control techniques like JIT and ABC to ensure efficient inventory management. The marketing management must also come up with promotional tools that ensure the companies sells their inventory stock as fast as possible. Next, since it was concluded that cash management has a major negative effect on financial performance of listed commercial and service firms in Kenya by rejection of null hypothesis. The study recommends that management of listed commercial and service companies in Kenya should strive to minimise as much as possible the cash conversion cycle period since longer cash conversion cycles affect financial performance of companies. Companies should put in place strategies that ensures they reduce cash conversion cycle period such that they can collect cash as early as possible. The cash management officer should eliminate all processes that increase cash conversion cycle period as much as possible.Finally, the study will be very important for policy purposes. Given the significant effect of working capital management on financial performance of listed commercial and service firms, The study wishes to recommend Capital Markets Authority to come up with specific policies in regards to listed companies under commercial and services sector and advice on whether there is need to revise the already existing Laws and Regulations. The capital market authority should ensure prudential working capital practices in the areas of debt management.

REFERENCES

[1] Akoto, R. K., Awunyo, V. D. & Angmo, P. L. (2013). Working capital management and profitability: Evidence from Ghanaian listed manufacturing firms. Journal of Economics and International Finance, 5(9), 373-379.

[2] Brennan, M., Maksimovic, V. & Zechner, J. (2003). Vendor financing, Journal of Finance, 4(3), 27-41.

[3] Cooper, S. & Schindler, D. (2011). Business Research Methods, 11th, edition. McGraw-Hill Publishing, Co. Ltd. New Delhi-India.

[4] Deloof, M. (2003). Does working capital management affect profitability of Belgian firms? Journal of business finance & accounting, 30(3-4), 573-588.

[5] Falope, O., and Ajilore, O. (2009). Working capital management and corporate profitability: Evidence from panel data analysis of selected quoted companies In Nigeria. Research Journal of Business Management, 3(3), 74-84.

[6] Ganesan, V. (2007). An analysis of working capital management efficiency in telecommunication equipment industry. Rivier academic journal, 3(2), 1-10.

[7] Gitman, L.J. (1974). Estimating corporate liquidity requirement: A simplified approach. Finance Revision Journal, 9(1), 26-35.

[8] Gujarati,D. (2003) .Basic Econometrics.4th ed. New York: McGraw Hill, pp.638-640.

[9] Kabethi, W. (2013). The Effect of Working Capital Management Practices on the Financial Performance of Small and Medium Enterprises in Kenya, Unpublished MBA Project, Nairobi: UON.

[10] Kimeli, M. (2014). Relationship between Working Capital Components and Financial Performance of the Commercial and Services Firms Quoted at the Nairobi Security Exchange. Unpublished MBA Project. University of Nairobi.

[11] Knauer, T., & Wöhrmann, A. (2013). Working capital management and firm profitability. Journal of Management Control, 24(1), 77-87.

[12] Kothari, C. K. (2004). Research Methodology, Methods and Technique. New Delhi: New Age International Limited Publishers.

[13] Kung'u, N. (2015). The Effects of Working Capital Management on Profitability of Manufacturing Firms in Kenya. Unpublished PhD Thesis, Juja: JKUAT.

[14] Lazaridis, I. & Tryforidis, D. (2006). Relationship between Working Capital Management and Profitability of Listed Companies in the Athens Stock Exchange. Journal of Financial Management and Analysis, 19 (1), 26-35.

[15] Makori, D. M. & Jagongo, A. (2013). Working Capital Management and Firm Profitability: Empirical Evidence from Manufacturing and Construction Firms listed on Nairobi Securities Exchange, Kenya. International Journal of Accounting and Taxation, 1 (1), 1-14.

[16] Mathuva, D. (2010). The Influence of Working Capital Management Components on corporate Profitability: A Survey on Kenyan listed firms. Research Journal of Business Management, 3, 1-11.

[17] Mills, E. S. (1959). Uncertainty and price theory. The Quarterly Journal of Economics, 73(1), 116-130.

[18] Mugenda, M. O. & Mugenda A. G. (2004). Research Methods: Quantitative and Qualitative Approaches. Nairobi: ACTS Press.

[19] Napompech, K. (2012). Effects of Working Capital Management on the Profitability of Thai Listed Firms. International Journal of Trade, Economics and Finance, 3(3), 227.

[20] Naser, K., Nuseibel, R. & Al-Hadeya, A. (2013). Working Capital Management and Financial Performance on manufacturing sector in Sri Lanka. European Journal of Business Management, 4(15), 23-30.

[21] Nazir, M. S. & Afza, T. (2009). Working Capital Management Requirements and the Determining Factors in Pakistan. Journal of Applied Finance, 12 (1), 1-13.

[22] Nyabwanga, R. N., Ojera, P., Lumumba, P., Odondo, A. J. & Otieno, S. (2012). Effects of Working Capital Management Practices on Financial Performance: A Study of Small Scale Enterprises in Kisii South District, Kenya. Africa Journal of Management, 6 (18), 5807 - 5817.

[23] Nyamweno, C. N. & Olweny, T. (2014). Effect of Working Capital Management on performance of Firms Listed at the Nairobi Securities Exchange. Economics and Finance Review, 3(11), 1-14.

[24] Nyaboke, S. P. (2017). The Effect Of Working Capital Management On Financial Performance Of Manufacturing Companies Listed At The Nairobi Stock Exchange. MBA Project, University of Nairobi.

[25] Omesa, N. W., Maniagi, G. M., Musiega, M. & Makori, G. A. (2013). Working Capital Management and Corporate Performance. A special Reference to Manufacturing Firms on Nairobi Securities Exchange. International Journal of Innovative Research and Development, 2 (9), 177-183.

[26] Owele, L. M. (2013). The Effects of Working Capital Management Approaches on the Financial Performance of Agricultural Companies Listed at the Nairobi Securities Exchange, Kenya. International Journal of Advanced Research, 1(1), 1-24.

[27] Owino, M. (2013). The Effects of Working Capital Management on Profitability of Manufacturing Firms in Kenya. Unpublished MBA Project, Nairobi: UON.

[28] Padachi, K. (2006). Trends in Working Capital Management. International Review of Business Research Papers, 2 (2), 45-58.

[29] Pandey, I. M. (2008). Financial Management, 10th Edition. New Delhi: Vikas Publishing House Pvt. Limited.

[30] Raheman, A & Nazr, M. (2007). Working Capital Management and Profitability. Case of Pakistan Firms. International Review of Business Research Papers, 3 (1), 279 - 300.

[31] Raheman, A., Afza, T., Qayyum, A. & Bodla, A. (2010). Working Capital Management and Corporate Performance of Manufacturing Sector in Pakistan. International Research Journal of Finance and Economics, 47, 151-163.

[32] Richards, D. Laughlin, J., (1980). A Cash Conversion Cycle Approach to Liquidity Analysis. Financial Management, 9(1), 32-38.

[33] Ross, S., Westerfield, R., Jaffe, J. & Jordan, B. (2008). Modern Financial Management. New York: McGraw-Hill.

[34] Schwartz, R. A. (1974). An Economic Model of Trade Credit. Journal of Financial and Quantitative Analysis, 9(04), 643-657.

[35] UNCTAD, (2008). Services and development: Implications for the Telecommunications, Banking and Tourism services Sectors in Kenya: Government Printers.

[36] Vural, G., Sökmen, A., & Çetenak, E. (2012). Effects of Working Capital Management on Firm's Performance: Evidence from Turkey. International Journal of Economics and Financial Issues, 2(4), 488.

[37] Waithaka, A. (2012). The relationship between working capital management practices and financial performance of agricultural companies listed at the Nairobi Securities Exchange, Unpublished MBA Project, Nairobi: UON.

[38] Wanguu, C. K. (2015). The Effects of Working Capital Management on Profitability of Commercial and Services Firms Listed at the Nairobi Securities Exchange. Academia.Edu. 3(11), 1-14.

[39] Weston, J.F., & Eugene F.B. (1979). Essentials of Managerial Finance (5th Ed.). Hinsdale: The Dryden Press

[40] Zariyawati, M., Annuar, M., Taufiq, H., & Rahim, A. (2009). Working capital management and corporate performance: Case of Malaysia. Journal of Modern Accounting and Auditing, 5(11), 47