EFFECT OF WORKING CAPITAL ON FINANCIAL PERFORMANCE OF SERVICE FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE

BY

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DECLARATION

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

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This project has been submitted for examination with my approval as the university supervisor.

Signature………………….… Date…………………………

Dr. Iraya Mwangi

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DEDICATION

To my family I dedicate this project.

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LIST OF ABBREVIATIONS AND ACRONYMNS

ACP   Average Collection Period

BP   Breusch Pagan

CBK   Central Bank of Kenya

CCC   Cash Conversion Cycle

CMA   Capital Markets Authority

EBIT   Earnings before Interest and Tax

KCB   Kenya Commercial Bank

LM   Lagrange multiplier

NASI   NSE All Share Index

NPV   Net Present Value

NSE   Nairobi Securities Exchange

PCA   Principal Component Analysis

ROA   Return on Assets

ROE   Return On Equity

SPSS   Statistical Package for Social Sciences

WC   Working Capital

WCTR   Working Capital Turnover Ratio

ABSTRACT

A descriptive research was done on the effect of working capital on financial performance of service firms listed at the Nairobi Securities Exchange. Data for a 5-year period (2012-2016) was collected for 24 service firms listed at the NSE. The data was obtained from CMA, CBK and websites of the firms under study. The data was analyzed annually giving a total of 120 data points. Multiple regression, correlation and descriptive analysis was done. From the descriptive analysis, ROA displayed a mean of 4.2669, Net working capital ratio 12.3066, inflation rate 6.9720 and firm size 9.6874. The value of adjusted R^2 was 0.657 indicating a significant variation of 65.7% on ROA due to changes in net working capital ratio, inflation rate, and firm size. A weak positive correlation was found between net working capital ratio and ROA (correlation coefficient=0.370). A weak positive relationship was also established between inflation and ROA (correlation coefficient=0.155). Firm size and ROA were found to have a strong positive relationship (correlation coefficient=0.651). The study concludes that net working capital ratio, inflation rate, and firm size affect financial performance of listed service firms in Kenya. It was recommended that the government though the CMA establish policies that would increase the working capital in listed service firms in order to increase financial performance. The Management of these firms should also take note and ensure that firm size is boosted in order to increase the financial performance.

CHAPTER ONE

INTRODUCTION

1.1 Background To The Study

Discussions on firm performance have been ongoing for a long time (Ogundipe, 2012; Madanoglu, 2011; Ngira, 2014). According to Almajali (2012), performance is the capacity to utilize skills in resource management to gain competitive advantage. For any business to have a going concern, the organization or firm should have the optimum liquidity, which should neither be excessive nor inadequate (Velnampy & Niresh, 2012). According to Salazar (2012) working capital is key to business success as it has a direct effect on financial performance. Managing working capital is thus a core activity, also a daily process that requires managers to monitor and project cash-flows (Kesimli & Gunay, 2011).

There are various theories which support the study objectives. This study was based on the transaction cost theory, agency theory and operating cycle theory. The transaction cost theory postulates that people incur costs without knowing. Agency proposes that the everyday running of a business venture is completed by managers as the agents of the proprietors of the business as principals who are otherwise called shareholders. According to the operating cycle theory, liquidity can be created by broadening the balance sheet liquidity by adding elements in the income statement.

WCM is a vital element of finance as it influences the liquidity and organizational performance through short term assets and liabilities. A firm's current assets take the highest percentage of a firm's assets. However, firms with thin records of current assets may bring about deficiencies and challenges in keeping up smooth operations. This may prompt additional expenses in the event that they may fail to meet certain budgetary commitments of a firm (Horne & Wachowicz, 2010). There should be proper expense management especially in the daily operations in order to increase firm value (Padachi, 2016).

1.1.1 Working Capital

Working capital has been defined as the relationship between a firm's current assets and current liabilities. IT represents the difference between the two which enables a firm meet daily financial needs. Managers seek to manage working capital effectively in order to reduce risks and ensure optimal investment in short term assets for optimal financial performance. They should ensure that the working capital is controlled and planned (Lazaridis & Tryfonidis, 2006).

Maintaining optimal working capital is key to liquidity and profits of a firm (Hampton & Wagner, 1989). Firms should ensure that they have a working capital policy with prioritized funding sources of short term assets while at the same time ensuring optimal current assets investment. Brigham & Gapenski (2007) indicated that profits and risk tradeoff define the working capital of a firm. Aggression in working capital is needed for low risky businesses and vice versa. Risky businesses require conserved working capital with high cash levels (Moyer, McGuigan & Kretlow, 2005).

Sathamoorthi (2002) states that; an increase in current asset to total asset leads to a negative effect on profitability, while an increase in current liabilities to total liabilities gives a positive effect on profitability. A key objective of firms is to ensure balance in the working capital elements. Firms base their performance on management and control of working capital elements by finance managers for working capital optimization (Filbeck & Krueger, 2005).

1.1.2 Financial Performance

Revenue generation from through assets utilization is what has been defined as financial performance. It indicates the financial well-being of a firm. Return on investment can be a good measure of financial performance. According to Oladipupo and Okafor (2013) there are different measures to performance. They include ROE, ROA, ROI, and ROIC. Traditional measures used include EBIT, operating profit, sales revenue and net profit (Sharma & Kumar, 2016). The measures are preferred due to the availability of data from financial reports prepared by firms annually (Deloof, 2003). Ricci and Vito (2000) notes that capital management involves WC control in-order to create risk-profits balance. Large number of short term assets create issues in paying short term liabilities. Bankruptcy may occur where there is a high number of current liabilities.

According to Oladipupo and Okafor (2013) there are different measures to performance. They include ROE, ROA, ROI, and ROIC. Traditional measures used include EBIT,

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operating profit, sales revenue and net profit (Sharma & Kumar, 2016). The measures are preferred due to the availability of data from financial reports prepared by firms annually (Deloof, 2013).

1.1.3 Relationship Between Working Capital And Financial Performance

Studies have consistently claimed an inverse relationship between the two both at micro and macro levels (Deloof, 2013; Oladipupo & Okafor, 2013). Working capital is managed to ensure operational efficiency and cash flow sufficiency for effect short term assets and liabilities management. Firm management should ensure sufficiency in cashflows which would remove any hiccups in daily operations. This would enhance both operational and financial performance. In order to enhance performance firms must ensure that the net working capital is positive. This creates the capacity to meet operational expenses and satisfy maturing short-term debt (Afza & Nazir, 2009).

Beside the key firm objectives of shareholder wealth and profitability maximization, a firm has a goal to optimize working capital for optimal performance and efficiency in operations (Eljelly, 2004). Arnold (2005) notes that holding working capital in excess ties up funds hence creating an imbalance between components of working capital. Financial managers should ensure that their companies have enough cashflows to finance operations while at the same time servicing long term debts.

1.1.4 Firms Listed At The Nairobi Securities Exchange

Globally, security exchanges play a pivotal role in economic growth and development by mobilizing economic resources within and outside the economy. They are key to transfer and storage of wealth. The Nairobi Securities Exchange (NSE) has been regulated since 1989 (NSE, 2016).

In 2008, the NSE All Share Index (NASI) was introduced as a measure of market performance. It is a market cap weighted index consisting of all the securities on the NSE. The equities market has been on a downward trend in the past six months with NASI, NSE 25 and NSE 20 declining by 3.5%, 9.9% and 5.7%, respectively (NSE, 2016).

The working capital for service firms listed at the NSE has been on a downward trend. The current assets for the service firms have decreased from 213 million in 2015 to 201 million in 2016. However, the current liabilities increased in the same period from 156 to 169 million. This has been accrued to the political temperatures in the country. Service firms need to ensure that they maintain an optimal working capital that will ensure their financial performance. The working capital is expected to fall in 2017 due to the general elections which have created tension in the country.

1.2 Research Problem

For smooth operations, there is need to regularly check on working capital of a firm (Runyora, 2012). Working capital is required to mitigate challenges like poor credit terms and poor decisions on long term debts (Loans) (Okungu, 2014). Since a higher level of

working capital comes at an opportunity cost to financial performance, businesses must therefore reduce the working capital in hand to the optimum level while confronting any challenges and costs that may arise due to limited solvency (Owele, 2014). Therefore, in order to enhance financial performance businesses, maintain short period for debt collection while increasing time to pay creditors (Mwaniki, 2012). Finance managers have an objective to reduce as much as possible the current assets and prolonging current expenses (Wahogo, 2014).

In Kenya, service firms have faced issues in management of working capital which has led to closure (World Bank, 2016). Such firms include Nyaga Stock brokers and Ngenye Kariuki Stock brokers. Other firms like Kenya Airways, KCB, Posta Kenya, Commercial Bank of Africa have restructured by laying off workers or closing down retail shops and branches in the country. This trend may shatter the dreams of Kenya meeting the economic pillar of vision 2030. Majority of the Kenyan firms do not maintain optimal working capital which has created the financial issues in the firms. Excessive working capital hinder the profitability maximization objective with inadequacy in working capital creating liquidity issues. This creates the need for firms to maintain optimal working capital which would enhance financial performance.

Given the role that working capital plays in a firm, research relating to working capital has been done (Almazari, 2013; Akoto et al. 2013; Sharma & Kumar 2011; and Gill et al. 2010). Despite the research being done globally very few studies have been done on this area locally. Kosgey and Njiru (2016) established a positive effect in their survey on working

capital and perfromance of small enterprises in Nakuru County. Makori and Jagongo (2013) established a negative relationship in their study on the effect of WCM on firm performance of manufacturing firms. The study sought to answer the question; what influence does working capital have on the financial performance of service firms listed at NSE?

1.3 Research Objective

To establish the effect of working capital on financial performance of service firms listed on the Nairobi Securities Exchange.

1.4 Value Of The Study

Investors will find this study useful as it will provide information on how working capital affects financial performance of listed firms. This will guide them on investment decisions relating to listed firms. Managers of listed firms may find this study to be of value. The findings will enable them to come up with relevant studies that will ensure maintenance of optimal working capital and improve financial performance of their firms.

Policy makers may get value from the study. The findings may form a basis for policy formulation in order to enhance financial performance through working capital in service firms listed with NSE.

The study will provide an opportunity for scholars and researchers to critique the findings and methodology. Literature from the study will create a basis for further research on

working capital and financial performance. Scholars will get literature for their studies and assignments relating to working capital and financial performance.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Literature relating to the study is reviewed in this chapter. The specific areas covered are theoretical review, determinants of financial performance and conceptualization of the study. Studies done on the topic was also empirically reviewed.

2.2 Theoretical Review

Three theories were reviewed in the study. These theories included transaction cost theory, the agency theory and the operating cycle theory. The theories are discussed in the sub sections below;

2.2.1 Transaction Cost Theory

Developed by Williamson in 1975, transaction cost theory postulates that transactions influence consumer behavior together with the daily interactions within an institution. This theory states that people incur costs during an exchange without their knowledge. Williamson (1975) called such cost as transaction cost.

The theory main focus is on the costs and the relative transactions in an institution in the completion of the transaction. The theory assumes costs incurred by the other institution (Williamson, 1975). According to Muchina and Kiano (2011), the theory claims that

transactions costs need to be minimized as much as possible when undertaking the transactions.

2.2.2 Agency Theory

Developed by developed by Jesen and Meckling in 1976, the agency theory indicates that the daily operations of a firm are handled by managers who act on behalf of the owners (shareholders) with both having different expectations. The major problem associated with this theory includes information asymmetry, moral hazard and adverse selection (Kwame, 2010).

Service firms listed in securities exchange hold debt especially short-term debt which is a key factor to firm value and performance. The management of debt is at the discretion of the managers who are entrusted by the owners to manage the business. The manager may misuse the funds from debt which may lead to financial issues. The theory relates to the study in that the management of the service firms undertake the daily management of the working capital on behalf of the shareholders.

2.2.3 Operating Cycle Theory

Park and Gladson developed the Operating Cycle Theory in (1963). Operating cycle theory indicates that liquidity is based on the measures of operating activities in a firm. The theory recommends that firms should add elements like creditors and debtor into the operation cycle in order to enhance liquidity management (Weston & Eugene, 1979). This is because working capital elements are not instant.

Richards and Laughlin (2010) noted that the turnover on debt shows the rate at which a company converts debtors into cash. The credit and collection policy affects the debtors outstanding in relation to sales. Good debt terms expand the customer base while at the same time reducing the liquidity of the debt. A long-term debt to customers increase the current and acidity test. Weston and Eugene (1979) notes that poor management of working capital components lead to a higher risk of solvency. The theory indicates that total days per turnover for debt indicates a firm's operating cycle (Richards & Laughlin, 2010).

2.3 Determinants of Financial Performance

Various factors influence financial performance of firms. This will include working capital, liquidity, inflation rates and size. The determinants are as discussed as below;

2.3.1 Working Capital

Many firms invest in working capital in order to finance their business which makes it key to financial performance of the firm (Deloof, 2003). A firm should always respond carefully to the working capital components as they are key to operational performance of a firm (Lazaridis & Tryfonidis, 2006). A significant effect of working capital on financial performance has been established (Lazaridis & Tryfonidis, 2006; Ganeshan, 2007). Binti and Binti (2010) found that working capital ratio is relates negatively to financial performance. Eljelly (2004) also found a negative effect of working capital on financial performance.

2.3.2 Inflation Rates

Inflation is the rate at which the price of goods increases within time. Inflation has a negative influence on financial performance of a firm (Akoto et al, 2013). If the inflation is high it hinders the allocation of resources to investments. Inflation also influence performance through manipulation of credit markets. Inflation increases friction in credit markets which in turn influences performance of a firm (Huybens & Smith, 2008).

2.3.3 Size

Firm size describes the capacity a firm has in terms of production and customer base. Firm size is a key element to financial performance described through the economies of scale. A large firm incur lower costs in production compared to small firms as it produces a large number of units. Firm size affects financial performance positively (Vijayakumar & Tamizhselvan, 2010; Lee, 2009). Ozgulbas et al. (2006) noted that economies of scale enable large companies to perform better.

2.4 Empirical Review

Iqbal and Zhuquan (2014) analyzed working capital management and its impact on firm's performance of 253 listed non-financial firms at Kerachi stock exchange. Financial firms were excluded from the study. The study focused on the period from 2006 to 2013. The study established that account receivable period had a positive relationship with performance (net operating profit). However average collecting period (ACP) displayed a negative effect. This study relates to the current study in that it focuses on working capital and performance.

However, the study focuses on general performance but not specifically financial performance.

Samiloglu and Demirgunes (2008) investigated working capital and profitability of listed Turkish firms. It focused on the period between 1998-2007. The findings indicated a negative relationship on working capital with ROA. Firm size displayed a positive effect. The study relates to working capital and a specific element of financial performance, that is, profitability. The study was done on all listed firms with the current focusing on service firms.

A study was done by Afza and Nazir (2007) on WC and Net profit of 208 firms listed at the KSE. The study was done on firms existing between 1998 and 2005. A positive relationship was established between working capital and financial performance (ROA). However, WC policies showed a negative relationship. This study despite focusing on working capital and financial performance of listed firms, it was carried on all listed firms while the current study will be done on service firms.

A relationship between WC and financial performance was investigated by Akoto, Awunyo and Ang (2013). The study targeted 13 Ghananian manufacturing firms listed from 2005 to 2009. Accounts receivable days displayed a negative effect on financial performance. However firm size and current ratio displayed a positive effect. The study focused on manufacturing firms other than service firms.

A study by Ogundipe, Idowu and Ogundipe (2012) established a negative relationship between WC and performance/market value. Using inferential statistics, short term debt had a negative effect on performance. The study does not give relationship between other elements of WC like account payables on financial performance.

A study by Ehiedu (2014) indicated that firms' assets affected financial performance of companies in Nigeria positively. Inferential analysis was used to analyze the effect. Despite the study focusing on current assets the study was done on non-listed companies.

WCM and corporate performance were investigated for listed firms in Kenya by Omesa et al. (2013). The period of focus was from 2007 to 2011. Using multiple regression, working capital had a positive effect performance. The study differs with the current in that it was done between 2007 and 2011 while this study will be done between 2012 and 2016 which puts the studies in different economic times.

Gakure et al. (2012) investigated the relationship between WCM and perfromance of 18 listed manufacturing companies (2006 to 2010). Using inferential statistics, a strong negative relationship was established between working capital and performance. APP and ACP displayed a negative relationship. The study differs with the current study in that the study was done on manufacturing firms while the current study will be done on service firms. The period of focus also differs in both studies.

Mutungi (2010) carried out a study on the relationship between working capital management and financial performance of oil marketing companies in Kenya. The study was inspired by

the fact that working capital in any firm is extremely critical and requires conscious balance between the components on the working capital namely cash, receivables, payables. From the correlation analysis, the study concluded an existing positive relationship between working capital variables of cash, receivables and payables on financial performance. The study was done on oil marketing firms other than listed service firms.

Kosgey and Njiru (2016) did a descriptive survey on working capital and the financial performance of SMEs in Nakuru County. The data was analyzed using the SPSS version. Cash management had statistically significant on financial performance which was positive. The study differs with the current one in that the study focused on SMEs which operate in a different economic period.

2.5 Conceptual Framework

Independent variable   Dependent variable

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┌─────────────────────────┐                    ┌─────────────────────────────┐
│ Working capital         │───────────────────▶│ Financial  performance  of  │
│   • Quick ratio         │                    │ listed  service firms       │
│                         │                   ↗│   • ROA                     │
└─────────────────────────┘                  ⁄ └─────────────────────────────┘
                                            ⁄
                              ┌────────────⁄──────────────┐
                              │   • Inflation rates       │
                              │   • Firm size             │
                              └───────────────────────────┘
```

Control variables
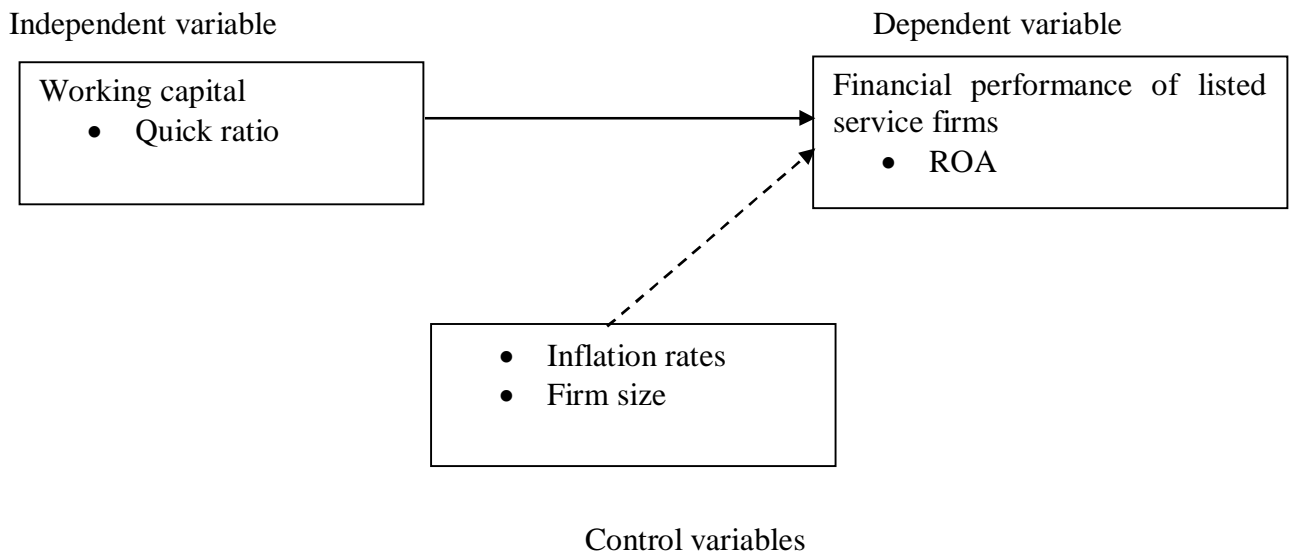
Figure 2.1: Conceptual Framework

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2.6 Summary of Literature Review

Throughout the literature different components of working capital have been discussed. Despite the studies focusing on working capital and financial performance, the studies have been done outside Kenya. The local studies have focused on different sector like manufacturing and oil other than the service industry. This creates a gap that with the study sought to fill.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Methodology is presented in this chapter. Specifically, it presents that research design, population, sample, data collection and data analysis.

3.2 Research Design

Design descriptive in nature was used. This design enables an investigation that utilizes numerical data to show the link between variables. Muli (2015) used the design on balance score card and financial performance.

This design was preferred as it allowed for analysis and variables relation in the study. It provides information on measurable characters of a population. Relationship between variables was established in the study hence making the design suit able.

3.3 Population And Sample

Mugenda and Mugenda (2003) defined a population as all individuals with similar features that follow to anticipated conditions. The population of interest in this research constituted all service firms over the period of 2012-2016. Given the reasonably small number of listed service firms all were involved. According to NSE (2016) listed service firms are 24 (Appendix I). Banks were excluded due to the uniqueness of their working capital. Regulations by Central Bank of Kenya give requirements on the liquidity that banks should

maintain based on their capital base. This may affect the working capital of banks which may manipulate its effect on their financial performance.

3.5 Data Collection

Flick (2008) defines data collection as gathering of empirical data in order to establish or answer prompt research questions. This study utilized secondary data from company financial reports and economic reports from CBK. Financial reports from the selected firms were obtained from NSE library, CMA, CBK and firm websites.

3.6 Data Analysis

Descriptive analysis was done through SPSS. This involved mean and standard deviation. Multiple regression and correlation analysis was also done. Data presentation was based on tables. Pearson correlation was done. All factors were based on annual figures.

3.6.1 Diagnostic Tests

Diagnostic tests were done to establish whether the model was significant. The test that was done included test for normality, heteroskedasticity and multicollinearity. The Shapiro–Wilk test was used to test for the normality. Heteroskedasticity test was done using Breusch–Pagan test. Multicollinearity was also checked for the model. This was done using the variance inflation factor (VIF).

3.6.2 Analytical Model

Regression analysis was used as indicated in the model below:

$Y = \beta_0 + \beta_1 Wc + \beta_2 Ir + \beta_3 Sz + \varepsilon$

Where;

Y $\qquad$ = $\qquad$ Financial performance [Return on Assets]

Wc $\qquad$ = $\qquad$ Working capital [Net working capital ratio]

Ir $\qquad$ = $\qquad$ Inflation rate [rate (%) as given by CBK]

Sz $\qquad$ = $\qquad$ Firm Size [Natural log of total assets]

β_0 $\qquad$ = $\qquad$ Constant

$\beta_1, \beta_2, \beta_3$ $\qquad$ = $\qquad$ Beta Coefficients

ε $\qquad$ = $\qquad$ Error term

3.6.3 Test of Significance

ANOVA was used to test significance of the variables and model. Anova will use F-statistics and p-value to test the fitness of the model to the data.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 Introduction

Data analysis is done in the chapter. The findings are also presented in this chapter. Discussions on the findings are also included.

4.2 Descriptive Statistics

Table 4.1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Return on Assets	120	-56.7095	60.0669	4.266890	12.5332262
Net working capital ratio	120	-95.3204	64.7768	12.306560	22.8594609
Inflation rate	120	5.7200	9.3800	6.972000	1.2686005
Firm Size	120	6.7829	12.9084	9.687421	1.5490035
Valid N (listwise)	120				

On the descriptive statistics presented in table 4.1, return on assets displays a mean of 12.5332. Working capital shows a mean of 22.8595, inflation rate displays a mean of 1.2686 while firm size a mean of 1.5490. Return on assets and working capital have a high standard deviation showing that they varied so much compared to inflation rate and firm size.

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4.3 Correlation Analysis

Table 4.2: **Correlations**

		Return on Assets	Net working capital ratio	Inflation rate	Firm Size
Return on Assets	Pearson Correlation	1	.370[**]	.155[*]	.651[*]
	Sig. (2-tailed)		.000	.043	.031
	N	120	120	120	120
Net working capital ratio	Pearson Correlation	.370[**]	1	-.045	-.157
	Sig. (2-tailed)	.000		.622	.088
	N	120	120	120	120
Inflation rate	Pearson Correlation	.155[*]	-.045	1	-.114
	Sig. (2-tailed)	.043	.622		.213
	N	120	120	120	120
Firm Size	Pearson Correlation	.651[*]	-.157	-.114	1
	Sig. (2-tailed)	.031	.088	.213	
	N	120	120	120	120

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

Networking capital ratio and ROA display a weak positive correlation (0.370) while inflation rate and ROA display a weak positive relationship (0.155). Firm size displayed a strong positive relationship with ROA (0.651). $p<0.05$ showing significance in the relationship.

4.4 Regression Analysis

Table 4.3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.822[a]	.676	.657	11.7445198

a. Predictors: (Constant), Firm Size, Net working capital ratio, Inflation rate

Adjusted R^2 shows a variation of 65.7% on ROA dues to changes in net working capital ratio, inflation rate, and firm size. 34.3% of the changes in ROA can be accrued to other factors other than firm size, working capital and inflation rate.

Table 4.4: ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3474.725	3	1158.242	8.397	.000[a]
	Residual	16000.314	116	137.934		
	Total	19475.039	119			

a. Predictors: (Constant), net working capital ratio, inflation rate, firm size
b. Dependent Variable: Return on Assets

Calculated F value (8.397) was higher than F critical (2.6802) indicating a significant model. The p-value was also less than 0.05.

Table 4.5: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-17.263	6.639		-2.600	.029
	Net working capital ratio	.215	.047	.391	4.569	.000
	Inflation rate	1.798	.841	.182	2.137	.035
	Firm Size	.656	.197	.281	3.330	.019

a. Dependent Variable: Return on Assets

$Y = \beta_0 + \beta_1 Wc + \beta_2 Ir + \beta_3 Sz + \varepsilon$ was fitted into;

$Y = -17.263 + 0.215Wc + 1.798Ir + 0.656Sz$

From regression equation established from table 4.5, holding net working capital ratio, inflation rate and firm size to a constant zero, ROA of -17.263 would be displayed. A unit increase in networking capital ratio increases ROA by 0.215. Increase in inflation rate by a unit increases ROA by 1.798 and with unit increase in firm size increases ROA by 0.656. $p < 0.05$ showing a significant effect.

4.5 Diagnostic Tests

Table 4.6: Tests Of Normality

	Shapiro-Wilk		
	Statistic	df	Sig.
Return on Assets	.800	120	.000
Net working capital ratio	.927	120	.000
Inflation rate	.739	120	.000
Firm Size	.967	120	.005

The study sought to test for normality of the data used in the research. This was done using Shapiro-Wilk test. From the findings on table 4.6, ROA, net working capital ratio, inflation rate and firm size display a $p<0.05$. Hence, we presume that the data values for the variables are not normally distributed.

Table 4.7: Heteroskedasticity Test

	LM	Sig
BP	0.975	.740

From the findings on table 4.7, the Breusch–Pagan p more than 0.05. The LM value was also close to 0.95 meaning that the regression has not violated the assumption of homoscedasticity. Hence, we presume that heteroskedasticity is not present in our data.

Table 4.8: Multicollinearity Test

Variable	Tolerance	VIF
Net working capital ratio	.961	1.040
Inflation rate	.976	1.025
Firm Size	.958	1.044

Multicollinearity was tested for the data used in the research. This was done using the variance inflation factor (VIF) which quantifies how much the variance is inflated. The findings in table 4.8 indicate that the VIF values were close to 1 indicating that the variance of the variables was inflated at a very low level. Hence there are no multicollinearity issues in the model data.

4.6 Discussion

The study found that net working capital ratio, inflation rate, and firm size affect the financial performance of listed firms in Kenya. This was supported by Ganeshan (2007) on net working capital, Huybens & Smith (2008) on inflation rate and Vijayakumar & Tamizhselvan (2010) on firm size. If the inflation, firm size and net working capital remain unchanged, a firm would experience a negative ROA. This was displayed by the negative (-17.263) results from the study. Net working capital was also found to be a key component to firm success in relation to ROA. This is due to 0.215 variation in ROA due to changes in net working capital.

The study found that there is a weak positive relationship between the networking capital ratio and ROA. The findings concur with Afza and Nazir (2007). However, they differ with Binti and Binti (2010) who found a negative relationship. Inflation rate and ROA displayed a weak positive relationship. Findings differ with those of Akoto et al, (2013) who established a negative relationship. Firm size displayed a strong positive relationship with ROA. The findings are in line with those of Ehiedu 2014; Vijayakumar & Tamizhselvan, 2010; and Lee, 2009.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter was based on the objective of the study. The conclusions and recommendation together with a summary of the findings were given.

5.2 Summary

From the descriptive statistics, the mean established indicated that the mean ROA stood at 4.2669, Net working capital ratio at 12.3066, inflation rate at 6.972 and firm size at 9.687421. return on assets and net working capital ratio have a high standard deviation showing that they varied so much compared to the inflation rate and firm size.

From the model summary, there was variation of on ROA dues to changes in net working capital ratio, inflation rate and firm size at 95% confidence interval. The variation was high as the value of adjusted R was more than 50%. The effect was found to be significant as the value of the p-value was below 0.05. From the Anova table, the calculated F value was found to be higher than the critical with the level of significance below 0.05. The influence of net working capital ratio, inflation rate and firm size on the changes in the ROA existed and was significant.

From the regression coefficients, an increase in net working capital ratio, inflation rate and firm size led to an increase in the ROA. However, the findings indicate that ROA increases

by small proportion due to the increase in net working capital ratio and inflation rate with firm size causing large proportional change in ROA. This shows that the ROA increase by a small amount due to a unit change in inflation rate and networking capital ratio but large proportions with unit change in firm size.

The p-values of the variables was found to be less than 0.05, an indication that the relationship between the variables and ROA was significant. The relationship between net working capital ratio and ROA was significant at the 0.01 significance level as the p-value was below 0.01. Net working capital ratio was the most significant variable in the study. This was followed by firm size and lastly inflation rate which were significant at the 0.05 significance level.

From the correlation analysis, a weak positive correlation was found between net working capital ratio and ROA. Further, inflation rate and ROA were found to have a weak positive relationship. This was shown by a negative regression coefficient absolutely less than 0.5. A strong positive relationship was established between firm size and ROA. The coefficient was found to be positive and more than 0.5.

5.3 Conclusions

From the regression analysis, the study concludes that working capital, inflation rate and firm size are the main determinants of financial performance of service firms listed at the NSE as shown by the regression coefficient of determination. The study concludes that working capital as measured by net working capital ratio significantly affects financial performance of

service firms listed at the NSE. The study further concludes that working capital has a positive effect on financial performance of service firms listed at the NSE. This means that an increase in net working capital ratio as a measure of working capital increases ROA as measure of financial performance. The study concludes that inflation rate significantly affects financial performance of service firms listed at the NSE. The study further concludes that inflation has a positive effect on financial performance of service firms listed at the NSE. This means that an increase in inflation leads to an increase in ROA as measure of financial performance. The study concludes that firm size significantly affects financial performance of service firms listed at the NSE. The study further concludes that firm size has a positive effect on financial performance of service firms listed at the NSE. This means that the larger the firm size the higher the financial performance.

From the correlation analysis a weak positive relationship exists between working capital and ROA (financial performance) of service firms listed at the NSE. Further, the study concludes that inflation rate has a weak negative relationship with ROA of service firms listed at the NSE. Firm size has a strong positive relationship with ROA of service firms listed at the NSE.

5.4 Recommendations For The Study

The study establishes that working capital as measured through net working capital positively relates to financial performance. The government through the CMA should establish policies that would increase the working capital in listed service firms in order to enhance financial performance of such firms. Also through the CBK policies, listed firms can get relief in case

they experience problems in their working capital. The management of listed service firms should come up with strategies that would increase the net working capital ratio in their firms. This would increase the ROA in their firms reflecting improved financial performance.

The government should formulate and implement policies that would maintain inflation of the country at optimal levels. This is because it has a weak positive effect on performance of service firms listed at NSE. The government can implement or amend the monetary procedures to be in line with the real economic stability and stock market through optimized inflationary trends.

The study showed a strong positive relationship between the firm size and financial leverage. That implies the size of the firms do matter when it comes to financial performance. The listed service firms should be concerned more with the quality or value added the assets they are acquiring.

The inflation rate is widely deemed as a negative factor in the economy. However, it is curious to note that inflation reflected a positive effect on financial performance of firms. This can be explained by the fact that most of the weight on inflation is carried by food products which do not affect these service firms. For this reason, they enjoy the increased money supply when customers buy their services at inflated rates which to them is a positive effect.

5.5 Limitations Of The Study

The study was limited to the effect of working capital on financial performance of 24 service firms listed on the Nairobi Securities Exchange. The study was based on 5-year study period of 2012 to 2016. This means that the findings may differ with others done over a different period. A longer period may have produced better results as the data would be more hence giving more credible results.

The data was collected from Capital Markets Authority, Kenya National Bureau of statistic, Central banks of Kenya and financial statements of selected firms. When accessing the data there was a high level of bureaucracy which increased time in data collection. This was overcome by having an introduction letter and getting an appointment with the concerned parties. This enabled the researcher to access data from the sources. The precision of the data also limited the study. This is because it was hard to confirm the credibility of the data.

5.6 Area For Further Research

The study was done on the effect of working capital on financial performance of 24 service firms listed on the Nairobi Securities Exchange. The study recommends a similar study on non-listed firms in order to compare the results. The study recommends that future researchers interested in this field of research might consider undertaking a similar study and increasing the period of study to ten years grouping the data quarterly.

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APPENDICES

Appendix I: Firms Listed At Nairobi Securities Exchange

1. Atlas Development and Support Services

2. Britam Holdings Ltd

3. Centum Investment Co Ltd

4. CIC Insurance Group Ltd

5. Deacons (East Africa) Plc

6. Express Ltd

7. Home Afrika Ltd

8. Jubilee Holdings Ltd

9. Kenya Airways Ltd

10. Kenya power

11. Kenya Re-Insurance Corporation Ltd

12. Kurwitu Ventures Safaricom Ltd

13. Liberty Kenya Holdings Ltd

14. Nairobi Securities Exchange Ltd

15. Nation Media Group

16. New Gold Issuer (RP) Ltd

17. Olympia Capital Holdings ltd

18. Sanlam Kenya PLC

19. Scangroup Ltd

20. Standard Group Ltd

21. Stanlib Fahari I-REIT New Gold Issuer (RP) Ltd

22. TPS Eastern Africa

23. Trans-Century Ltd

24. Uchumi Supermarket Ltd

Appendix II: Data Collection Form

Year	Current assets (Kshs. Millions)	Non-current assets (Kshs. Millions)	Total assets (Kshs. Millions)	Current liabilities (Kshs. Millions)	Long term liabilities (Kshs. Millions)	Total liabilities (Kshs. Millions)	Inflation %	Net profit (Kshs. Millions)
2012								
2013								
2014								
2015								
2016								

Appendix III: Data

		Current assets	Total assets	Current liabilities	Inflation	Net profit
		(Kshs. Millions)	(Kshs. Millions)	(Kshs. Millions)	%	(Kshs. Millions)
Atlas Development and Support Services	2012	1500	7,211	1,047	9.38	-173
	2013	2363	10,034	1,079	5.72	-155
	2014	3810	14,322	1,079	6.88	371.1
	2015	5502	19,298	-377	6.58	-1,425
	2016	4367	22,079	881.4	6.30	431.7
Britam Holdings Ltd	2012	5,621.962	23,347.841	2248.031	9.38	4,184.734
	2013	7649.263	46,902.578	3307.167	5.72	4,204.600
	2014	2257.826	21,775.322	1453.239	6.88	6,013.313
	2015	1489.282	21,218.371	173.168	6.58	3,650.561
	2016	2764.500	18,927.250	388.660	6.30	3,652.688
Centum Investment Co Ltd	2012	1,402	15,721	1,036	9.38	446

	2013	5,420	21,407	2,270	5.72	1,034
	2014	5,765	28,811	3,875	6.88	1,047
	2015	5,765	41,265	3,389	6.58	4,867
	2016	20,540	51,543	12,229	6.30	1,868
CIC Insurance Group Ltd	2012	8,937.607	14,069.551	658.571	9.38	1,388.201
	2013	9,686.003	17,035.817	1115.79	5.72	1,405.904
	2014	12,867.289	23,690.387	7,426	6.88	1,088.440
	2015	17610.800	24,920.235	1468260	6.58	1,136.604
	2016	14340.88	26,826.687	5875.378	6.30	188.185
Deacons (East Africa) Plc	2012	1,230.600	1,954.114	568.081	9.38	-165.886
	2013	1,298.429	1,983.049	383.173	5.72	164.277
	2014	1,193.489	1,961.882	411.775	6.88	61,403
	2015	1,692.409	2,486.072	583.148	6.58	113.750
	2016	1,360.120	2,281.680	827.082	6.30	-276.345
Express Ltd	2012	63.986	495.609	161.491	9.38	13.028
	2013	103.198	480.525	161.186	5.72	0.229
	2014	75.023	477.922	86.279	6.88	-77.352
	2015	92.811	584.672	112.659	6.58	-22.751
	2016	139.539	872.973	182.929	6.30	-24.261

Home Afrika Ltd	2012	1,957.838	2,479.077	2,020.124	9.38	108.110
	2013	2,426.642	3064.447	2,225.263	5.72	80.629
	2014	2,967.988	3,718.635	2,505.60	6.88	8.956
	2015	3,060.900	3,862.315	3,130.604	6.58	-390.091
	2016	3,182.933	3,930.010	3,953.105	6.30	-168.458
Jubilee Holdings Ltd	2012	4237.574	43,803.260	3,132.793	9.38	2,284.501
	2013	13800.327	61,159.185	5150.007	5.72	2,502.817
	2014	14201.292	74,505.374	4749.876	6.88	3,103.653
	2015	20085.547	82,378.010	4372.038	6.58	3,121.093
	2016	17258.219	90,567.743	4004.671	6.30	3,675.947
Kenya Airways Ltd	2012	21,833	77,432	23,756	9.38	1,306.000
	2013	28,608	122,696	50,841	5.72	-9,012.000
	2014	29,636	148,657	63,756	6.88	-2,721.000
	2015	46,996	187,654	89,859	6.58	-26811.859
	2016	29,710	155,685	72,942	6.30	-27064.731
Kenya power	2012	28,159.384	136,008.887	31,383.138	9.38	2,918.782
	2013	37,727.982	184,212.535	38,875.140	5.72	3,445.717

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	2014	50,411.859	220,109.352	48,847.728	6.88	6,456.234
	2015	66,062.475	272,286.082	45,599.182	6.58	7,431.957
	2016	50,009.817	297,542.180	50,773.461	6.30	7,556.163
Kenya Re-Insurance Corporation Ltd	2012	11,562.782	23,787.957	6,102.234	9.38	2,801.892
	2013	12,672.821	28,222.587	8,084.129	5.72	3,000.431
	2014	16,792.721	32,174.251	8,425.721	6.88	3,137.172
	2015	29,038,221	35,572.195	10,220.508	6.58	3,433.619
	2016	19,200.278	38,031.447	9,928.352	6.30	3,378.602
Liberty Kenya Holdings Ltd	2012	7,478.339	27,390.346	3,246.288	9.38	886.671
	2013	10,461.873	31,452.190	4,872.539	5.72	1,105.920
	2014	10,103.789	33,194.053	2,380.282	6.88	1,148.985
	2015	11,242.578	34,533.689	3,074.230	6.58	736.050
	2016	6,234.981	34,697.831	4,973.087	6.30	627.834
Nairobi Securities Exchange Ltd	2012	143.341	882.600	104.190	9.38	84.781
	2013	284.944	1,149.124	282.034	5.72	262.419
	2014	788.067	1,685.104	128.506	6.88	320.041
	2015	927.413	1,918.235	131.859	6.58	305.592

	2016	1,009.195	2,013.745	137.696	6.30	183.956
Nation Media Group	2012	7,248.212	10,677.412	3,216.700	9.38	2,510.300
	2013	7,854.300	11,444.200	3,116.400	5.72	2,533.200
	2014	7,375.00	11,944.300	3,118.300	6.88	2,460.500
	2015	7,524.90	12,696.700	3,591.100	6.58	2,222.700
	2016	7,163.30	12,174.100	3,456.000	6.30	1,688.900
New Gold Issuer (RP) Ltd	2012	52456.004	369035.615	7899.845	9.38	-2,522.098
	2013	57139.097	363096.37	8078.793	5.72	-16,520.483
	2014	57453.658	351495.049	9498.643	6.88	-17,313.064
	2015	42578.739	382075.576	15312.130	6.58	-20,045.201
	2016	62841.621	403,675.104	17,934.299	6.30	276.005
Olympia Capital Holdings ltd	2012	727.616	1,620.955	261.562	9.38	42.860
	2013	730.355	1,897.407	260.928	5.72	7.884
	2014	354.807	1,576.337	303.527	6.88	45.043
	2015	437.441	1,531.409	274.014	6.58	-29.551

	2016	419.498	1,527.522	204.834	6.30	14.834
Safaricom Ltd	2012	21194.195	33396.274	37,615.900	9.38	12,627.607
	2013	25,292.330	132,689.54	11,034.219	5.72	17,539.810
	2014	28,250.282	132,988.25	9,785.440	6.88	23,017.540
	2015	32,356.897	157,828.605	51,907.951	6.58	31,871.303
	2016	29,523.945	160,158.146	42,605.336	6.30	38,104.290
Sanlam Kenya PLC	2012	3,257.620	17,362.820	1,463.300	9.38	125.673
	2013	2,561.292	23,262.725	1,774.512	5.72	2,673.098
	2014	3,767.707	24,599.410	1,562.895	6.88	871.190
	2015	3,693.324	27,109.278	1,438.529	6.58	27.350
	2016	5,243.782	27,994.884	1,301.233	6.30	128.369
Scangroup Ltd	2012	7,346.586	8,361.646	3,155.479	9.38	752.009
	2013	10,459.953	12,744.583	4,259.750	5.72	831.327
	2014	10,923.159	13,284.104	4,440.009	6.88	625.476
	2015	10,136.904	12,468.479	3,678.463	6.58	478.672
	2016	11,112.161	13,486.398	4,673.097	6.30	460.380
Standard Group Ltd	2012	1,248.272	3,501.548	1,118.703	9.38	183.307
	2013	1,643.577	4,136.762	1,421.651	5.72	189.493
	2014	1,491.019	4,101.749	1,222.941	6.88	220.514

	2015	1,704.446	4,355.614	1,787.245	6.58	-289.603
	2016	2,001.691	4,404.931	1,711.903	6.30	198.521
Stanlib Fahari I-REIT New Gold Issuer (RP) Ltd	2012	982.560	10,921.821	745.827	9.38	5.625
	2013	1,246.872	11,067.564	791.032	5.72	12.928
	2014	1,343.894	11,768.037	871.090	6.88	48.402
	2015	1,289.910	25,092.983	989.721	6.58	-17.440
	2016	1,546.902	30,689.666	1,036.363	6.30	53.010
TPS Eastern Africa	2012	1,943.895	13,357.694	2,173.754	9.38	214.924
	2013	2,271.039	16,136.097	2,618.112	5.72	451.001
	2014	2,227.179	15,939.177	2,770.758	6.88	274.419
	2015	2,324.588	15,815.80	2,234.326	6.58	-280.613
	2016	3,362.680	16,983.12	2,050.420	6.30	129.328
Trans-Century Ltd	2012	7,509.767	21,845.754	5,846.150	9.38	740.647
	2013	8,784.234	23,840.273	5,907.129	5.72	626.432
	2014	8,234.663	19,463.658	5,162.953	6.88	-2,277.929
	2015	8,713.554	21,817.981	13,835.076	6.58	-2,422.574
	2016	5,722.229	18,911.552	11,362.085	6.30	-863.890

Uchumi Supermarket Ltd	2012	1,594.146	4,941.888	2,203.769	9.38	273.977
	2013	1,725.315	5,573.533	2,448.121	5.72	357.010
	2014	2,250.436	6,884.853	3,350.169	6.88	384.288
	2015	1,777.287	6,412.996	5,179.947	6.58	-3,421.360
	2016	1,664.039	5,002.216	6,432.172	6.30	-2,836.732