

**EFFECT OF SELECTED FIRM CHARACTERISTICS ON
FINANCIAL PERFORMANCE OF FIRMS LISTED IN THE
NAIROBI SECURITIES EXCHANGE**

BY

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DECLARATION

I confirm that this is my original work and has not been submitted for presentation at the University of Nairobi or any other institution of higher learning.

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This research project has been submitted for examination with my approval as the University supervisor

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DEDICATION

I dedicate this work to my husband Geoffrey Ruteere and son Mark Mwenda for their patience and encouragement during the entire study period.

TABLE OF CONTENTS

DECLARATION	ii
ACKNOWLEDGEMENT	iii
DEDICATION	iv
LIST OF TABLES	vii
LIST OF FIGURES	viii
ABBREVIATIONS	ix
ABSTRACT	x
CHAPTER ONE: INTRODUCTION	1
1.1 Background to the Study.....	1
1.1.1 Firm Characteristics	2
1.1.2 Firm Performance	4
1.1.3 Firm Characteristics and Financial Performance	5
1.1.4 Firms Listed in the Nairobi Securities Exchange	7
1.2 Research Problem	8
1.3 Research Objective	10
1.4 Value of the Study	11
CHAPTER TWO: LITERATURE REVIEW	12
2.1 Introduction.....	12
2.2 Theoretical Review	12
2.2.1 Resource-Based Theory	12
2.2.2 Trade off Theory	14
2.2.3 Organizational Theory	16
2.3 Determinants of Firm Performance	17
2.3.1 Firm size.....	18
2.3.2 Firm Age	18
2.3.3 Liquidity.....	19
2.3.4 Tangible Assets	20
2.3.5 Leverage.....	21
2.4 Empirical Evidence	21
2.5 Conceptual framework.....	25
2.6 Summary of Literature Review	25

CHAPTER THREE: RESEARCH METHODOLOGY	27
3.1 Introduction.....	27
3.2 Research Design.....	27
3.3 Target Population.....	27
3.4 Sample Size and Sampling Techniques	28
3.5 Data Collection	28
3.6 Data Analysis	28
 CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION	31
4.1 Introduction.....	31
4.2 Descriptive Statistics.....	31
4.3 Correlation Analysis	32
4.3.1 Multicollinearity Test.....	32
4.3.2 Correlation Matrix	33
4.4 Regression Analysis and Hypotheses Testing	34
4.5 Discussion of Research Findings	37
 CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS	
.....	39
5.1 Introduction.....	39
5.2 Summary of the Findings.....	39
5.3 Conclusion	40
5.4 Recommendations.....	42
5.5 Limitations of the Study.....	43
5.6 Suggestions for Further Studies	44
 REFERENCES.....	46
 APPENDICES	51
Appendix I: Firms Listed at the NSE as at 31st December 2015	51
Appendix II: Data Collection Sheet.....	52
Appendix III: Collected Data.....	53

LIST OF TABLES

Table 4. 1: Descriptive Statistics	31
Table 4.2: Multicollinearity Test	32
Table 4.3: Correlation Table	33
Table 4.4: Model Summary	34
Table 4.5: ANOVA.....	35
Table 4.6: Regression Coefficients	35

LIST OF FIGURES

Figure 2.1: Conceptual Framework	25
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ABBREVIATIONS

AIMS	- Alternative Investments Market Segment
ANOVA	- Analysis of Variance
CMA	- Capital Markets Authority
CR	- Current Ratio
EBIT	- Earnings before Interest and Tax
FI	- Financial Innovation
GDP	- Gross Domestic Product
IAS	- International Accounting Standards
NSE	- Nairobi Securities Exchange
QR	- Quick Ratio
R&D	- Research and Development
RBT	- Resource Based Theory
ROA	- Return on Assets
ROE	- Return on Equities

ABSTRACT

This study sought to establish the effects of selected firm characteristics on firm financial performance of firms listed in the Nairobi Securities Exchange. The study was anchored on Resource based theory, trade off theory and organizational theory. This study adopted a descriptive research design which aims at testing associations of relationships. The population of this study comprised all firms listed in the Nairobi Securities Exchange (NSE). The study collected secondary data of the listed firms for the five years between 2011 and 2015. The data collected was analyzed using Statistical Package for the Social Sciences (SPSS) software. To test the effects of the selected firm characteristics on performance, a multivariate regression analysis was used to study the relationship between the dependent and the independent variables. The study established that leverage had a weak positive significant correlation with financial performance; liquidity had a strong positive significant correlation with financial performance; size had a strong positive significant correlation with financial performance; asset tangibility had a strong positive significant correlation with financial performance, age had a strong positive significant correlation with financial performance. The study concludes that there is a moderate relationship between leverage and financial performance of firms listed on NSE, liquidity is a significant factors affecting financial performance of firms listed on NSE, size significantly affects financial performance of firms listed on NSE; asset tangibility is a significant factor affecting financial performance of firms listed on NSE. Age significantly affects financial performance of firms listed on NSE. The study recommends that the top management of all firms listed at NSE should judiciously combine both debts and equities in their capital structures to enhance the value of their firms. Listed firms should strive to remain liquid at all times through efficient working capital management practices. The top management of listed firms should set up strategies of growth and expansion in sizes for example growth in market segments and shares. Listed firms and all companies generally in Kenya should keep sufficient amount of fixed assets in relation to current assets which shall increase their accessibility to capital from financial and other lending institutions.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Firms operate in an open system where they receive inputs from the environment, transform them through internal processes and or distribute the output that is either a product or a service back to the environment (Murgor, 2014). Thus, the environment in which the firm operates greatly influences its performance. This indicates that when the environmental factors are taken into consideration, the owners and managers of corporations need to carry out analysis of the weaknesses and strengths so as to overcome these. Managers of firms also need to think of how to overcome external threats and make maximum use of opportunities as and when they arise in order to hold a competitive position against their competitors. Tactful implementation of strategic plans can help companies achieve a competitive edge position over their competitors. This can be achieved through utilization of internal strengths to get optimal returns from opportunities and overcoming internal weaknesses and external threats (Cheng, 2008).

The choice and the implementation of strategies are partly influenced by the firm's characteristic which eventually affects their performance. Firm characteristics refer to the managerial and demographic variables related to the value of assets, information and technological capabilities and processes with an organization.

According to Barney (2001), certain characteristics of a firm for example human capital, organizational capital and physical factors are likely to play a significant role by allowing firms to remain competitive in their operating environments. Organizational performance is clearly demonstrated in financial statements of an organization, returns of shareholders and product markets. For effective determination

of performance of an organization, the management ought to evaluate the extent of attainment of the goals and objectives of the business organization.

There are several stakeholders with keen interest in performance of the business enterprise as a result their interests. Performance of a firm serves to grow and develop the economy as a whole. The contribution of firm performance to national growth can be determined through the values of Gross Domestic Product GDPs. In view of the Economic Survey Highlight (2016), there was growth in GDP from 5.3% in 2014 to 5.6 % in 2015. This growth in GDP was attributed to by superior performance in the retail and whole sale sectors, agriculture, manufacturing and construction sectors of the national economy. This is a clear indicator that some firms were marked with improved performance in comparison to other although they operated under the same economic environments. Therefore, as much as there is a discrepancy between organizational structures and company structures among different firms, understanding the factors influencing this performance is crucial.

1.1.1 Firm Characteristics

Firm characteristics are described as the managerial and demographic variables comprising of the internal environment of the firm (Zou and Stan, 1998). The variables making up firm characteristics include the knowledge and informational capabilities and processes within a business enterprise. This research will evaluate the effects of firm size, age, liquidity, leverage and tangible asset on firm performance. Leverage is the debt part of capital structure. Firms that have debts in their capital structured are said to be levered (Hovakimian, Opler & Titman, 2002). Highly levered firms are better placed to lower their free cash flow at disposal of the

management. This is beneficial as it reduces possibilities of misappropriations of the funds and they are motivated to enhance efficiencies.

Firm size can be measured in terms of the asset base, value of sales and amount invested in capital which can then lead to classifying firms as either big or small. Big corporations enjoy economies of scale that accrue due to their size and enhance their financial performance as compared to small firms (O'Sullivan, Abela & Hutchinson, 2009). Firm age indicates the number of years a firm has been in operation since establishment (Pollet, 2009) and is measured using the years in operations. Older firms have established themselves in the environment and as such, they are active in the market as compared to new firms in the market. Evans (2007) indicated a positive relationship between age and profitability of firms and those older firms grow at a faster rate compared with young firms.

Liquidity refers to the firm's ability to meet its current obligations as and when they fall due (Renato, 2010). It measures the ability of a business enterprise to meet short term obligations by the available liquid assets. Bhunia, Bagach and Khamrui (2012) indicated that absolute liquid ratio is more accurate test of liquidity than current ratio and liquid ratio. According to the International Accounting Standards, IAS 38, tangible assets are things that are physical in nature. According to Grant (2009), tangible assets have strong transparency with weakness to resist efforts of duplication by competitors in the industry. They are classified into current assets and fixed or noncurrent assets. Current assets are held by firms with sole objective of trading. Current assets include cash and cash equivalents of the business organization (Dong, Charles and Chi, 2012). Noncurrent assets also called fixed assets come in various forms for example property, plant and equipment, fixtures and fitting, land and

buildings. Firms hold fixed assets with purpose of enhancing productivity or provision of the goods and services.

1.1.2 Firm Performance

There are three specific areas making up organizational performance of the firm and these include return to shareholders, financial performance and product markets (Gaganis, Hasan & Pasiouras, 2013). Firms have designed systems of measuring performance and these systems help in evaluating the extent that an organization has effectively used resources generating wealth to shareholders. Performance management systems indicate the overall performance of management on daily basis (Bhunia, Bagach & Khamrui, 2012).

There are several attributes of a system of measuring and determining performance. Any performance management system ought to be in position to promote the desired goals of the organization. Secondly, a performance management system should be linked to the goals, characteristics and strategies of the organization. Dornier and Selmi (2012) identified environmental factors, organizational and human factors as the determinants of firm performance.

Kaplan and Norton (2001) in their Balanced Scorecard measurement of performance identified four distinct measures: Financial, non financial, learning and growth. In the past, firms relied mainly on accounting measures of performance which have increasingly been criticized due to perceived inadequacies (Mahfoudh, 2012). As a result, firms have increasingly begun to use other performance measures such as economic value measures and non-financial measures as well (Liargovas & Scandalis, 2010).

Among the non financial measures of performance are employee turnover, customer satisfaction, market share, customer response time and new product innovation and development. Otieno (2007) conducted a study to determine how the utilization of “new” measures of performance among listed firms at NSE in Kenya, and established that non financial performance measures are often used when dealing with negative effects. These non financial measures used during these times include economic value measures and traditional accounting performance (Musuva, 2013). Large firms often use economic value added in aligning managerial decision to the interests of their shareholders. This study will use Return on Equity (ROE) as the measure of performance because it is widely accepted and has an accounting base.

1.1.3 Firm Characteristics and Financial Performance

Firm characteristics are unique qualities of organizations that help in differentiating one organization from another. They influence the competitiveness of an organization and its overall financial performance results. There are various firm characteristics which present opportunities that if well utilized improve the overall financial results within a given financial period (Himmerlberg, McDonald, & Schumacher, 2009). The appropriateness with which a firm utilizes its distinctive characteristics determines how well it utilizes the resources to generate revenue and profits through minimization of operating costs (Baumann, Becker, Etebari and Kaen, 2010). According to Pandey (2015), large firms are likely to possess economies of scale as compared to their smaller counterparts. Large firms are well capitalized with adequate assets which presents them with a chance to take up opportunities as and when they arise a situation which may not be visible in smaller firms. This therefore means that

the size of an organization as measured by number of employees and total assets will have a direct impact on the financial results posted by a firm (Nyabwaga, Lumumba, Odondo, & Simeyo, 2013).

Another key characteristic that has a relationship with the financial outcomes posted by an organization is the level of leverage. The proportion of borrowed capital to own capital would play a key role in the financial results posted by a firm. This is because the credit extensions come with restraints which may limit the collaboration of an organization with other strategic partners, limit access to further financing as the collateral may have been tied up thereby directly affecting the financial results posted within a given financial period. The period that an organization has been in operations plays an important role in determining the financial results posted by an organization. Liargovas and Scandalis (2010) argued that older firms are more experienced and have been exposed to different economic times hence remaining relevant in the market as opposed to the new younger firms

Current assets and liabilities have a direct effect on financial performance because they consist of operating assets that generate revenues and cash flows for the firm Goddard et al. (2005), Nunes et al. (2008) and Dogan (2013). Working capital management influences the ability of the firm to finance its day to day operations and ultimately its liquidity levels. Proper management of inventory would avoid tied-up capital, handling charges, obsolescence and theft while debt management would minimize bad debts and cash held out by debtors. Firms bargain for favourable credit terms so that they take longer to pay their suppliers hence ensuring there is cash in their coffers.

A liquid firm takes advantage of available investments opportunities, cash discounts and reduced interest charges offered by financial institutions. This enables the firm to grow and optimize its operations. Deloof (2003) observes that the greater the level of company liquidity, the more the firm is able to meet its short-term obligations, contributing to increased company profit. It is important that a firm maintains a balance between liquidity and profitability while conducting its daily operations. According to Nyabwaga, Lumumba, Odondo, and Simeyo (2013), profitability is also relevant to liquidity. Moderate amount of liquidity may propel entrepreneurial performance but an abundance of liquidity may do more harm than good.

1.1.4 Firms Listed in the Nairobi Securities Exchange

The Nairobi Securities Exchange (NSE) is the key market for listing of companies in Kenya. The market is divided into thirteen distinct segments representing different industries in which the firms operate. These segments include: agricultural, automobiles and accessories, banking, commercial and services, construction and allied, energy and petroleum, insurance, investment, investment services, Manufacturing and allied, telecommunication and technology, real estate investment trust and exchange traded fund (NSE, 2017).

The firms boast of differing characteristics in terms of size as measured by total assets, period in existence, leverage liquidity, and tangible assets which differently affect their financial outcomes within a given financial period (Kithuka, 2013). The firms in each of the segments have been in existence for varying periods with varying levels of leverage which means that the experience they possess varies. At the same time, the firms have operated in their respective industries for varying period hence have varying experience on the dynamics of the industry (Kimondo, 2014).

1.2 Research Problem

Firm characteristics play a key role in determining how well an organization utilizes the opportunities in the operating environment to improve the financial results registered within a given financial period. The size of an organization measured by the amount of assets at its control or the proportion of a market that it controls in a given industry determines the proportion of customers it is likely to serve hence determine the financial outcome (Pandey, 2015). For instance, McMahon (2001) established a positive linear relationship between firm size and the financial outcome recorded in a given financial period. Loderer and Waelchli (2010) argued that new firms may not have adequate experience about an industry thus limiting their ability to respond should there be changes. Further findings by Usman and Zahid (2011) indicated that older firms have the benefits of loyal customers who have been transacting with them for long and would be reluctant to switch to the competitor. The leverage levels may be constraining the extent to which the organization can enter into new business ventures within the contract period hence limiting their performance. Various firm characteristics determine the activity level within organizations and the financial results posted within that period.

Firms listed at the NSE have posted mixed results over a period of time. Some firms have posted impressive results in terms of returns on capital employed while others have posted negative results. For instance, in 2006, Uchumi Supermarket which pioneered the hypermarket concept in Kenya in the early 1990s was put under receivership due to financial and operational difficulties, which culminated in its inability to meet its obligations on an ongoing basis (NSE, 2017). Over the past five years, Kenya Airways recorded a decline in performance prompting queries about its sustainability which led to frequent changes in management. Firms like Safaricom

Limited and Centum have continuously positive results by increasing the shareholders' wealth (Kithuka, 2013). Even within the same segment, firms have posted different results prompting the question on how the various firm characteristics affect financial performance. For instance, banking has seen different financial institutions post varying results within the same period. While Kenya commercial Bank, Co-operative, Equity Bank posted positive growth in their profitability, other banks like National Bank of Kenya posted a decline in profitability over the same period (Kimondo, 2014).

A number of studies have been conducted on firm characteristics and financial performance across the world. Guest (2009) looked at the impact of number of board members on financial results recorded by large firms in United Kingdom between the period 1981-2002 where the findings indicated that firm characteristics had direct relationship to financial outputs recorded by the firms. Goddard, Tavakoli, and Wilson (2005) while looking at how profitability of firms was affected by firm characteristics established the existence of a negative relationship between firm size and profitability. Dogan (2013) examined profitability and firm characteristics where it was established that they size and leverage had a positive relation to profitability whereas firm's age and leverage had negative relation to return on assets. In another study, Panigrah (2014) found a negative relationship between working capital management and returns though the company earned a good return attributable to aggressive working capital policy. These studies though relevant for the study variables, they present a contextual challenge as the macro environment setting in which they were conducted differs from the current study setting.

In Kenya, Kimondo (2014) noted that there exists a weak positive relationship between liquidity and financial performance. Simiyu and Akoth (2007) found a negative relationship between the firm's profitability and its liquidity level whereas Kinuthia (2009) and Maina (2011) found that liquidity management was not a significant contributor of the firm's profitability and that there exist other variables that will influence return on assets. Mwangi (2010) found a strong positive relationship between leverage and return on equity.

A single factor cannot reflect every aspect of a company performance and therefore the use of several factors allows a better evaluation of the financial profile of firms. As illustrated above effects of various firm characteristics on performance have been studied in the Kenyan context. However most of them studied the effect of one firm characteristic to firm performance while other firm characteristics were used as control variables. The studies that have similar variables as intended to be undertaken by this study, considered only one sector of the NSE. There is no known study which has been carried out on the effects of leverage, liquidity, firm size, tangible asset and age on performance of non-financial companies listed in the NSE. Hence there is a research gap which this study intends to address. This study attempted to address the question: what are the effects of selected firm characteristics on firm performance in the various sectors of the Nairobi Securities Exchange?

1.3 Research Objective

To establish the effects of selected firm characteristics on firm financial performance of firms listed in the Nairobi Securities Exchange.

1.4 Value of the Study

This study sought to establish the relationships between selected firm characteristics and performance of the firm. The findings of this research would build further the theories on finance by comparing the expected theoretical outcome on the relationships between the selected firm characteristics and performance with the actual results from a developing economy like Kenya. The results of the empirical evidence from this research would also form a basis for further research by students and scholars on related topics.

This study would guide managers and policy makers to make informed decisions on their investments, financing and budgetary decisions as they attempt to maximize shareholders wealth by improving their firm value and performance. This can be achieved only when managers and policy makers understand how capital expenditure on tangible assets, leverage and liquidity levels affect their operating activities and put mechanisms to establish, grow, monitor and maintain their optimal levels. Managers would also gain insight on how firm size and experience gained over the ages can affect their performance.

Findings of this research would provide a platform for the unlisted firms to assess their performance and compare their practices with the best practice associated with the listed firms. This might persuade them to enlist with NSE and reap the benefit of immense growth opportunities by making the company more visible, strengthening the capital base, making strategic acquisition and attracting a more professional management team. Shareholders of both listed and unlisted firms would be able to monitor whether management is using the firm resources optimally to achieve the expected performance.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature relating to firms characteristics and their effect on firms financial performance. The literature review has been organized in the following sections. Theoretical review underlying the study, empirical studies on the subject area and summary of the section.

2.2 Theoretical Review

This sub topic looks into the general theory relating to firm characteristics as well as the theories advanced on selected firm characteristics under study but shall only mention a few.

2.2.1 Resource-Based Theory

This theory was put forward by Penrose (1959) who indicated a need to view firms as bundles making up productive resources. As such, managers have greater task of exploiting these resources by use administrative frameworks developed by these firms. According to Penrose (1959), there could variation in these bundles of production held and controlled by firms as indicated by variation in performance firms in a similar industry. According to O’Cass and Weerawardena (2010), the manner in which a firm posses and deploys it resources significantly impacts on the competitive ability of such firms in implementation of product marketing strategies. In view of Baker and Sinkula (2005), this theory indicates that the performance of the firm is a function of the specific resources and capabilities of the firm. Baker and Sinkula (2005) further indicate that excellent performance of the firm is related with strange characteristics.

There are three classifications of the resources of the firm. These classifications include organizational capital resources, human capital resources and physical capital resources. It is however important to note that firms do not necessarily gain competitive advantage from all these resources. According to Collis and Montgomery (1995), values of resources can be assessed and tested by the competitive superiority, substitutability, rareness, durability and inimitability. According to the proponents of this theory, firms can easily gain competitive advantage and superior performance through effective utilization of internal resources (Pearce & Robinson, 2010). In line with Resource based view, firm attributes such as age, size, leverage, liquidity and tangible assets become valuable resources if they can enable firms exploit opportunities and neutralize threats.

This theory will be help in explaining variation of performance since it specifically addresses firm characteristics rather than industry factors. There are variations in physical resource in terms of quantity and quality. These variations form the basis of competitive advantages to firms especially when they are difficult to replicate and are durable enough. According to Adero (2012), it is unclear on the specific resources that are crucial for performance of a firm. Moreover, the degree that possessing substitution amount results into superior performance of the firm. This is because the financial resources which in most cases are expensive and limited are made up of monetary resources for example debtors, cash and debts. This study will examine how liquidity and leverage will influence performance as a variable resource that influences performance.

Based on RBV, it is expected that the size of the firm and profitability have positive relationship as large firms are better placed to access resources and benefit from economies of scale. This helps them to effectively embrace diversification of their products as opposed to small firms and this results into increased profitability (Nunes et al., 2009). The RBV theory is of the view that the extent and ease of access to resources by a firm depends on how old the firm is (Autio, 2005).

The main reason for this is that the age of the firm is associated with more experience, strong networking abilities to financial institutions and other businesses and this eases accessibility to resources and enhances efficient operations (Curran et al., 1993). This theory helps explain how an organization can take advantage of its characteristics to turn them into a resource which can be applied for competitive advantage. The level of tangible assets, experience built over the period in existence, liquidity and firm size can be used to offer a firm competitive advantage over its competitors.

2.2.2 Trade off Theory

The Trade off Theory is based on the premise that an optimal target capital structure will be identified by a firm which is believed to balance the benefits of the interest tax shield against the costs related to financial distress. While the interest tax shield is likely to enhance value of the firm, however, this will only happen to a certain level as increase in leverage increases the risk of default which is likely to result into financial distress costs. Therefore, the benefits of the interest tax shield will soon be eroded by the increase in financial distress and this reduces the value of the firm. An analysis of the link between financing of debts and value of the firm was conducted by Myers (1997). It was established that profits earned by firms are used in paying leverage and

this lowers leverage. It was further established that profitable business organizations use low leverage if Trade off Theory is in force. According to Static Trade Off theory, it is likely that profitable firms will have more debts in their capital structure due interest tax shield which reduces the value of taxable profits. This indicates that leverage of the firm and performance is positively related.

According to Trade-Off Theory, larger firms are highly levered as they have large stability with cash flows that are less volatile and are likely to benefit from economies of scale that accrue after issue of securities at the market (Gaud, Jani, Hoesli & Bender, 2005). The size of the firm is associated with information asymmetry in the market in that for larger firms, more information is available about them at the market and this makes enables them easily access financial resources. Information asymmetries on the other hand increase the costs of small firm in accessing external sources of finances. According to Titman and Wessels (1988) however, a negative relationship exists between debt ratios and firm size. According to them, smaller firms have limited access to equity markets and as such tend to depend on loans from financial institutions to fund their operations.

In view of the liquidity level of the firm, the trade off theory indicates that an optimal level of liquidity is usually targeted by firms so as to balance the costs and of holding cash. The costs of holding cash encompass low return rates on these assets and the tax benefits. However, there are several benefits that accrue to a firm by holding cash. First, transactional costs are saved. Secondly, liquid assets may be used to finance investments and activities at times where other resources are not available.

The tradeoff theory will be useful in assessing the effects of leverage and the liquidity levels on firm performance. This theory helps explain the leverage level in an

organization. As an organization takes on debt, it trades off its freedom to make decisions influencing its profitability with debt constraints. This also introduces the risk of bankruptcy in cases where the firm fails to repay the debt as scheduled.

2.2.3 Organizational Theory

This theory was formulated by Baumann and Kaen (2003) to explain effect of the size and age of the firm on performance is clearly explained by this theory. According to Dean et al. (1998), size of the firm is related to performance of the firms due to sunk costs of the industry, vertical integration and the overall performance of the industry.

According to Daft (1995), large firms have different layers and hierarchies of management, access to skilled man power and larger number of departments that enhances efficiencies. Moreover, large firms are characterized by centralized management controls and formalizations and this creates lot of bureaucracies as opposed to small firms.

Miller and Chen (1994) related size and age the firm to inertia. Inertia according to them is defined as slow or inadequate acceptable and adaptation to change. This resistance to change may affect the profitability of the firm. Older firms have benefited the learning curve benefits and they are more experienced as compared to new firms. According to Penrose (1959), large firms are in position to enhance their performance as they enjoy economies of scale associated with their size in the market.

According to Baumann and Kaen (2003), based on transaction costs, span of control costs and agency costs, the theory predict at some level, agency cost and average transaction costs are likely to increase and neutralize the scope of scale of economies of scale. This implies that within a specific industry and within a common institutional environment, firm size and profitability may be linked through a tradeoff

of economies of scale, transaction costs and agency costs. The ageing of firms could be the expression of organizational rigidities and inertia that make it difficult for the firm to recognize, accept and implement innovation signals from the market. As a result, the expectation is that firms lose their competitive edge as they grow older usually manifested in higher costs, slow growth, lower margins, less vigorous R&D and investment activities, and older assets.

2.3 Determinants of Firm Performance

Two streams of research on determinants of performance of the firms are in place in relation to the literature of the business policy. One of these streams of research is primarily based on social and behavioral aspects viewing success of business due to organizational factors and their fit in environment (Wernerfelt & Hansen, 1989).

The second stream of research is based on economic tradition and it emphasizes the role played by external market factors and performance of the firm. These external factors include the industry factors and characteristics that the firm operates and the position of the firm in relation to competitors. In view of Musuva (2013), previous scholars' research has indicated that the influence of external factors on performance of firm indicated variance range of 4 percent to 8 percent while variance from specific effect of performance ranged from 27 percent to 47 percent.

It means that carrying out studies on firm specific factors help firms to know how their unique characteristics influence performance. This study will concentrate on the effects of tangible assets, liquidity, leverage, firm size and age on the performance of the firm.

2.3.1 Firm size

The size of the firm is measured differently in different sectors of the economy.

For example, some authors determine firm size based on asset base controlled and owned by the firm, while other scholars use the number of staff especially for small and medium enterprises SMEs. The level of infrastructure and amount of offered employment can also be used to measure the size of the firm (McMahon, 2001). This is because good infrastructure and a higher number of skilled employees in an organization are often associates with better financial results recorded by organizations. A study conducted by Öner (2015) indicated that larger organizations in terms of assets controlled stood higher chances of recording higher financial outcomes as compared to their competitors with less assets and employee count (McMahon, 2001).

According to Hennessey and Levy (2002), large firms enjoy the economies of scale with large bargaining and negotiation powers over their stakeholders and this improves the level of their performance as compared to small firms. Contrary to this, Fiegenbaum and Karnani (1991) established that smaller firms are likely to be more profitable as compared to large firms due to their structure of costs. According to them, small firms are in position to change their level of output over time in line with the changing conditions in the market. The mature and stable firms on the other hand require maintaining relatively stable output levels. Small firms however have less power than larger firms making it difficult to compete in a competitive environment.

2.3.2 Firm Age

The age of a firm is seen as number of years the firms has been in operation since establishment. Firm age is measured by the period an organization has been in

existence. Kneiding and Mas in Usman and Zahid (2011) classified the factors relating to period the firm has existed into three categories. These categories are the new, medium and old firms. Old firms are deemed to have gained enough experience to enhance operations in effective and efficient manner and this enhances their financial performance. Old firms have access to qualify and experienced human capital that contributes towards organizational performance. A study by Kristiansen, Furuholt, and Wahid (2003) established a direct relationship between the period in operation and firm performance within relevant ranges.

There are organizational inertia that operate in old firms and this makes old firms to inflexible and resistance to environmental changes. This makes new firms to snatch away any market share (Sorensen & Stuart, 2000). Concurring with these views, Kumar (2004) opined that older companies obtain the economies of scale based on the learning, they were susceptible to rigidities and inertia in adapting to changes and this could lower their performance. Liargovas and Skandalis (2008) established that older and mature firms have skills that are sophisticated as they have greatly benefited from economies of scale and advantages of learning and therefore not prone to the liabilities of newness. Hence, they have a superior performance.

2.3.3 Liquidity

Liquidity is availability of sufficient and adequate cash to meet the operations of the business as they fall due (Kumar, 2004). Liquidity determines how prepared the firm is in responding to opportunities and challenges from the operating environments and this enhances financial performance (Liargovas & Skandalis, 2010). Firms with high liquid levels do not incur heavy financial costs compared to small firms that are

characterized with limited funds. This implies that more liquid firms can easily decide to use projects giving positive NPVs.

Liquid assets can be used in financing the investments and activities of firms especially where external resources are not sufficient. Liquid assets also help firms in dealing with unexpected contingencies. According to Vahid, Mohsen and Mohammadreza (2012), working capital management plays a significant role in determining success or failure of firm in business performance due to its effect on firm's profitability.

2.3.4 Tangible Assets

There is possibility that investment in tangible assets is likely to affect profitability of the firm as it expands and widens the level of productivity which increases the sales revenue. Firms can respond to increasing demand from the stakeholders through ability to integrate tangible assets. The differences in performance among firms therefore come about due to capabilities that different firms have and the heterogeneity of these assets (Teece et al., 1997).

According to Campello (2005), the value of tangible assets often fall sharply the moment they are placed anywhere outside an organization. In the process of seeking finances for investment from lenders, organizations always pledge their tangible assets as collateral. The assets pledged as collateral act as protection to lenders for any likely moral hazard that may arise out of the lending contractual agreement (Myers, 2001). Firms with higher levels of tangible assets have higher chances of accessing the much needed financial resources to finance their positive net present value projects for improved shareholders' wealth (Rajan & Zingales, 1995).

2.3.5 Leverage

Leverage measures the proportion of borrowed capital to own capital used to finance business operations. There is no optimal recommended level of leverage for firms because the debt carrying capacities differ (Dahmash, 2015). Debt is always associated with conditions which may limit the extent to which a business engages in business opportunities as they come by (Ben & Zouari, 2014). This therefore means that within the debt period, it may be difficult for a business to expand as the providers of capital may limit its activities.

According to Modigliani and Miller (1958), there was no effect of capital structure on value of the firm. Modigliani and Miller in 1963 indicated an increase in debts in capital structure lowers the tax liability and this enhances the value of the firms. On the other hand, Kraus and Litzenberger (1973) indicated that increased use of debts in the capital structure increase financial distress costs in terms of bankruptcy and this offsets the tax benefits of the debts. This indicates that there is no optimal level of debts in the capital structure (Ben & Zouari, 2014).

2.4 Empirical Evidence

This section contains review of both international and local empirical studies relevant to the study. These are empirical studies done on firm characteristics and show the relationship between size of the firm, liquidity, leverage, tangible assets, age of the firm and financial performance in varying contexts.

Husnah et al. (2013) conducted a study to examine the effect of intangible assets (human, organizational and relational capital) on competitive strategy and financial performance. The study was done among the Small and Medium Enterprises SMEs in Indonesia. The sample size was 38 managers of these SMEs. The study established no

relationship between human and relation capital on performance. The study further established that resources of the firms (human, organizational and relational) are likely to increase competitive selection of strategies.

Panigrah (2014) examined the effect of working capital on liquidity, profitability and risk of bankruptcy. The study covered a period of 2000-2009. The study adopted exploratory research design. The study was done in India. The findings of the study indicated that there was negative working capital caused by the aggressive working capital policy. The study recommends that an adequate level of profitability and liquidity ought to be maintained.

In Jordan, Dahmash (2015) assessed how company size affect profitability. The study covered all the 1538 public companies listed on Amman Security Exchange. The period of the study was 2005-2011. Size was measured in terms of total revenue. Two different models were applied on the sample of the study to analyze the findings of the study. The study established that banks, financial firms that are well diversified and the firms in the real estate sector had insignificant coefficient values for the total assets with company size.

In Nigeria, Enekwe, et. al. (2014) sought to assess how financial leverage affect financial performance. This study was carried out among pharmaceutical firms. The study covered a 12 year period from 2001 to 2012. The study adopted an ex-post facto research design. The study established that debt equity ratio and the debt ratio negatively relate with return on assets ROA while a positive relationship exists between interest coverage ratio and ROA.

In Thailand, Chiadamrong and Sinthupundaja (2015) sought to examine how firm characteristics affect financial performance. Data for the study was collected from 242

manufacturing firms listed on security exchange market in Thailand. The study used Structural Equation Modeling (SEM) in identification of relationships among the variables. The study established that the growth prospects of the firm negatively impacts on liquidity. Size of the firm negatively impacted on leverage of the firms but positively impacted on liquidity and financial performance. Liquidity lower financial performance of the firms. Age had no significant effect on performance.

In a study using descriptive survey research design, Mwaura (2014) sought to determine how capital structure affected financial performance. The study was conducted among firms listed at NSE in Kenya. The study used 3 investment companies as the target population. The study covered a period of 2010-2013. From the findings of the study, leverage influences performance of firms. Total debts influenced financial performance.

Sanghani (2014) sought to determine how liquidity affected performance. The study was conducted among non financial firms as listed at NSE. The study covered a period from 2009 to 2013. The study used multiple linear regression analysis to analyze the findings. The findings of the study indicated that current ratio, operating cash flows and capital structure have strong and positive effect on performance. The study recommends that firms ought to expand their current assets in order to enhance their liquidity positions.

Kinuthia (2009) assessed how the capital structure affected performance. The study sampled all the sectors on the NSE except the financial and investment sectors. The two sectors were exempted as their leverages are regulated by relevant authorities. The study covered a period of 2002-2006. The study established that the highest values of the leverage ratio, market value to book value and price earnings ratio were seen in

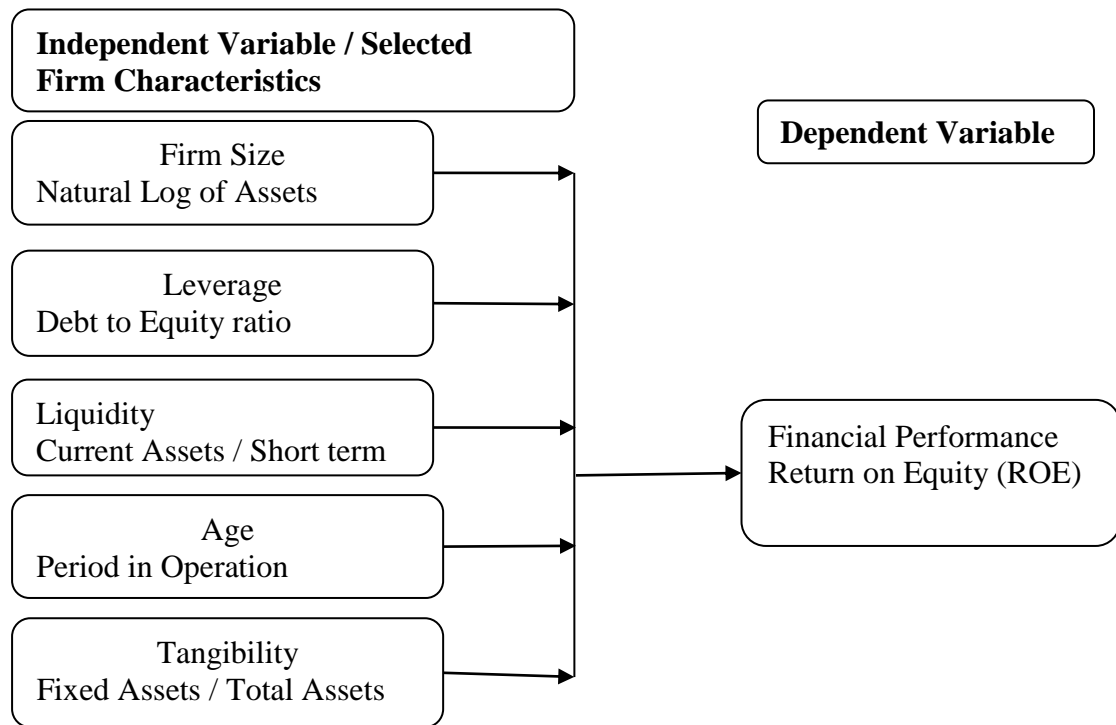
the commercial and services sector firms. Moreover, significant differences in leverage was witnessed for different industries which indicates that different firms have different capital structures based on the specific firm characteristics.

Kithuka (2013) studied how the size of the firm and innovativeness affected financial performance. The study was done among 41 firms listed at NSE. The study covered a period of 2010-2012. The study established that financial innovation and size of the firm were related. The study established that as much as large firms have better performance as compared to small firms as indicated by international review of the studies, however, for NSE, small firms did not outperform medium firms.

Mahfoudh (2012) examined how firm characteristics affected financial performance. The study was conducted among the 6 firms listed under the agriculture segment. The period of the study was 2007 to 2012. The study used regression analysis to analyze the findings. From the findings, board size and liquidity were statistically significant variables while age of the firm and leverage were insignificant. This study only focused on the agricultural sector of the listed firms hence the need to find the effect of firm characteristics across all the sectors of the firms in the NSE. Further, these results contradict the findings of Mwaura (2014) which revealed a negative correlation between leverage and financial performance for investment sector firms listed at the NSE, hence the need for further research.

2.5 Conceptual framework

Figure 2.1: Conceptual Framework



Source: (Author, 2017)

2.6 Summary of Literature Review

For a number of years, researchers have described and analyzed inherent factors that may impact on the firms' financial performance. Husnah et. al. (2013) found out human capital and relational capital does not directly affect financial performance while Chiadamrong and Sinthupundaja (2015) found out that firm growth has negative impact on the firms' liquidity. The firm size was found to have negative impact on the level of leverage, but positive impact on the liquidity and financial performance improvement. However, age was not found to have any significant impact on the variables of interest. These results are somewhat inconsistent with the findings of Mahfoudh (2012) who found out firm size, leverage, firm age, and

liquidity were positively related to firm financial performance while board size was negatively correlated to financial performance.

Although these studies highlight different characteristics and their effect on financial performance, their findings for instance on the effect of size on financial performance are not harmonious, hence the need to conduct a conclusive research that incorporates a substantial portion of the Nairobi Securities Exchange in order to eliminate any sector specific characteristics. This study will focus on five firm characteristics that affect financial performance, particularly the effect of leverage, liquidity, firm size, tangible assets and age on firm financial performance will be studied for non-financial firms listed in the Nairobi Securities Exchange.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology to be adopted in this study by highlighting the population, sampling technique, sample size, as well as the data collection and analysis technique.

3.2 Research Design

This study used a descriptive research design which aims at testing associations of relationships. A descriptive research design was used to portray an exact profile concerning an event, situation or an individual (Robinson, 2002). A descriptive research design ensured collection of data which is quantitative in nature and this enhances quantitative analysis of the collected data using either inferential or descriptive statistics (Saunders et al, 2007).

In addition, the study incorporated quantitative research. This study intended to evaluate the relationship between the selected firm characteristics and firm performance. The findings of the study were illustrated in tables where applicable.

3.3 Target Population

The population of this study comprised all firms listed in the Nairobi Securities Exchange (NSE). The study collected secondary data of the listed firms for the five years between 2011 and 2015. However, the target population for the study was the non-financial companies. The financial sector was excluded from the study due to the uniqueness of the environment in which they operate and to remove any anomalies associated with this highly regulated sector (Appendix I).

3.4 Sample Size and Sampling Techniques

The statistical society of this study included all firms listed in NSE during 5-years period from 2011 to 2015 and as such ensured that all sectors in the NSE are represented. According to Mwangi et al. (2014) a census approach enhances validity of the collected data by including certain information-rich cases for study.

3.5 Data Collection

Data collection occurs when the researcher gathers evidence for gaining different insights concerning a certain situation or event. Data collection helps the researcher to determine answer adequate questions which formed the basis of the study (Wangechi, 2012). This study used a cross-sections data which enhanced the quality and quantity of data levels that would otherwise be impossible to achieve with only one of the two dimensions (Mwangi et ai., 2014). Secondary data was collected from the annual financial statements of the targeted firms listed at the Nairobi Securities Exchange from 2011 to 2015. From the financial statements, information on the level of current assets, current liabilities, fixed assets, total assets, debt, annual sales, and equity, Earnings before Interest and Tax (EBIT) and capital structure will be tabulated. The secondary data was sourced from the Nairobi Securities Exchange, Capital Market Authority and the published financial statements of the firms under study.

3.6 Data Analysis

The data collected was analyzed using Statistical Package for the Social Sciences (SPSS) software. To test the effects of the selected firm characteristics on performance, a multivariate regression analysis was used to study the relationship between the dependent and the independent variables. The Regression analysis is

expected to yield Coefficient of Determination (R²), Multiple R, and Analysis of Variance (ANOVA) along with relevant t-tests, f-tests and P values. Descriptive statistics were used to summarize qualitative data and the results presented in tables and charts. Inferential statistics will be used to draw conclusions at 95% Confidence Level. ($\alpha = 0.05$).

The following linear regression model was adopted.

Y=f (firm age, size, liquidity, leverage, tangible asset)

$$\text{PROF} = \beta_0 + \beta_1 \text{SIZE} + \beta_2 \text{LEV} + \beta_3 \text{LIQ} + \beta_4 \text{TANG} + \beta_5 \text{AGE} + u$$

Where;

PROF is the profitability; (Return on Equity)

SIZE is the Logarithm of annual sales

LEV Ratio between total liabilities and total assets

LIQ Ratio between current assets and short-term debt

TANG Ratio between fixed assets and Total Assets

AGE Natural logarithm of the number of years since listing in the NSE

u the error which is assumed to have a normal distribution.

The data was analyzed using SPSS 23.0.

The study made use of Analysis of Variance to help determine the strength of the model in determining the relationship between the selected firm characteristics and performance

3.6.1 Diagnostic Tests

To ensure that data collected was free from biasness and one variable data is not related to another variable data, the study conducted a Mutlicollinearity tests. The study ensured that no dummy variable was included which could bring the challenge of Mutlicollinearity (Maddala & Lahiri, 2009).

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the findings of data analysis of this research. Secondary data was gathered from financial statements of respective companies and the NSE reports. The collected data was coded in SPSS after which analysis commenced. The findings were analyzed by both descriptive and inferential statistics.

4.2 Descriptive Statistics

The descriptive analysis of the research findings are indicated in Table 4.1. N represents the number of observations which are 320.

Table 4. 1: Descriptive Statistics

	N	Mean	Std. Deviation	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Leverage	320	0.51	0.349	3.78	0.13	41.66	0.27
Liquidity	320	1.46	1.755	2.66	0.13	9.69	0.27
Size	320	5.66	2.508	-1.47	0.13	0.88	0.27
Tangibility	320	0.42	0.285	0.10	0.13	-1.35	0.27
ROE	320	0.05	0.388	-7.26	0.13	64.67	0.27
Age	320	1.04	0.601	-0.30	0.13	-0.48	0.27

From the findings, leverage had a mean of 0.51 with standard deviation of 0.349; skewness was 3.78 and Kurtosis was 41.66. Liquidity had mean of 1.46, standard deviation of 1.755, skewness of 2.66 and Kurtosis of 9.69. Size had a mean of 5.66, standard deviation of 2.508, skewness of -1.47 and Kurtosis of 0.88. Asset Tangibility had a mean of 0.42, standard deviation of 0.285, skewness of 0.10 and Kurtosis of -1.35. Return on Equity ROE had a mean of 0.05, standard deviation of 0.388, Kurtosis

of -7.26 and Kurtosis of 64.47. Age had a mean of 1.04, standard deviation of 0.601, skewness of -0.30 and Kurtosis of -0.48.

4.3 Correlation Analysis

Correlation analysis was conducted to establish relationship between the variables of the study. Correlation analysis is normally used to measure the strength and direction of relationship between the variables of the study. For a weak correlation, “r” ranges from ± 0.10 to ± 0.29 ; in a moderate correlation, “r” ranges between ± 0.30 and ± 0.49 ; while in a strong correlation, “r” ranges from ± 0.5 and ± 0.9 . The positive or negative sign points to the direction of the relationship (Shirley et al., 2005).

4.3.1 Multicollinearity Test

Multicollinearity test was conducted to identify how the dependent variable correlated with other dependent variables. The variance for inflation factor VIF was used to test for multicollinearity.

Table 4.2: Multicollinearity Test

	Collinearity Statistics	
	Tolerance	VIF
Size	0.171	5.864
Leverage	0.295	3.390
Liquidity	0.230	4.350
Tangibility	0.049	2.333
Age	0.069	1.422

From the findings, size had VIF of 5.864, leverage had 3.390, and liquidity had 4.350, asset tangibility had 2.333 and age had 1.422. Whenever the values of VIF lies between 1 and 10, then there is no multicollinearity while when the VIF is less than 1 or greater than 10, then there is presence of multicollinearity (Cohen, Cohen, West & Aiken, 2013). Therefore, as all the VIF values were between 1-10, this shows that the dataset did not suffer from multicollinearity symptoms.

4.3.2 Correlation Matrix

The correlation analysis findings are clearly shown in Table 4.3.

Table 4.3: Correlation Matrix

		ROE	Size	Leverage	Liquidity	Tangibility	Age
ROE	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	320					
Size	Pearson Correlation	0.564	1				
	Sig. (2-tailed)	0.000					
	N	320	320				
Leverage	Pearson Correlation	0.470	0.748	1			
	Sig. (2-tailed)	0.000	0.000				
	N	320	320	320			
Liquidity	Pearson Correlation	0.829	0.865	0.693	1		
	Sig. (2-tailed)	0.000	0.000	0.000			
	N	320	320	320	320		
Tangibility	Pearson Correlation	0.534	0.838	0.833	0.798	1	
	Sig. (2-tailed)	0.000	0.000	0.000	0.000		
	N	320	320	320	320	320	
Age	Pearson Correlation	0.560	0.765	0.808	0.756	0.961	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	
	N	320	320	320	320	320	320

From the correlation analysis results, size had Pearson correlation of 0.564 with p value $p=0.000 < 0.05$. This indicates strong significant positive relation between size as a specific firm characteristic and financial performance. According to Öner (2015), larger organizations in terms of assets controlled stood higher chances of recording higher financial outcomes as compared to their competitors with less assets and employee count.

Leverage had Pearson Correlation of 0.470 with p value $p=0.000 < 0.05$; an indication of moderate positive significant relationship between leverage and financial

performance of listed firms at NSE. According to Modigliani and Miller (1958), there was no effect of capital structure on value of the firm.

Liquidity had Pearson Correlation of 0.829 with p value $p=0.000<0.05$; hence liquidity significantly affected financial performance of listed firms at NSE. According to Mahfoudh (2012) board size and liquidity were statistically significant variables while age of the firm and leverage were insignificant.

Asset tangibility had Pearson Correlation of 0.534 with p value $p=0.000<0.05$, showing statistically significant association between asset tangibility and financial performance of listed firms at NSE. According to (Rajan & Zingales, 1995), firms with higher levels of tangible assets have higher chances of accessing the much needed financial resources to finance their positive net present value projects for improved shareholders' wealth.

Age of listed firms had Pearson Correlation of 0.560 with p value $p=0.000<0.05$; showing that age significantly influences financial performance of listed firms at NSE. Kristiansen, Furuholt, and Wahid (2003) established a direct relationship between the period in operation and firm performance within relevant ranges.

4.4 Regression Analysis and Hypotheses Testing

In this study, multiple regression analysis was conducted to establish relationship between the study variables. The findings are shown in subsequent sections.

Table 4.4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.899 ^a	0.809	0.806	0.17101

From the Model Summary, the coefficient of correlation R is shown as 0.899, showing strong positive correlation between the selected firm characteristics and

financial performance of firms listed in the Nairobi Securities Exchange. The coefficient of determination R square is 0.809; showing that 80.9% change in financial performance of firms listed at NSE is explained by the firm specific characteristics (size, leverage, liquidity, asset tangibility and age of the firms). These factors cannot explain all the variation in financial performance of listed firms as there are other factors that were not covered in the current study. These other factors explain up to 19.1% change in financial performance of these listed firms at NSE.

Table 4.5: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	38.850	5	7.770	265.703	.000b
Residual	9.182	314	.029		
Total	48.033	319			

The ANOVA findings at 5% level of significance shows an F calculated value as 265.703 while F critical F (5, 314) is 2.243. As the value of F calculated is greater than F critical at 0.05, this shows that the overall regression model was a significant predictor of the relationship between selected firm characteristics and financial performance of firms listed in the Nairobi Securities Exchange.

Table 4.6: Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.812	0.084		9.707	0.000
Size	0.066	0.009	0.427	7.142	0.000
Leverage	0.016	0.050	0.015	0.324	0.746
Liquidity	0.299	0.011	1.354	26.321	0.000
Tangibility	1.023	0.151	0.754	6.773	0.000
Age	0.371	0.060	0.575	6.131	0.000

From the coefficient above, the following regression is formulated:

$$\text{PROF} = 0.812 + 0.066\text{SIZE} + 0.299\text{LIQ} + 1.023\text{TANG} + 0.371\text{AGE}$$

Where;

PROF is the profitability; (Return on Equity); SIZE is the Logarithm of annual sales; LIQ Ratio between current assets and short-term debt; TANG Ratio between fixed assets and Total Assets; AGE Natural logarithm of the number of years since listing in the NSE.

From the findings, when all the firm characteristics of listed firms at NSE were held constant, financial performance of these firms would be at 0.812, a unit increase in size of listed firms would result into 6.6% change in financial performance, a unit increase in liquidity would lead to 29.9% change in financial performance, a unit increase in asset tangibility would result into 102.3% change in financial performance and a unit change in age of listed firms would result into 37.1% change in financial performance.

With regard to significance level at 0.05, the study established that size of the firm had significant effect on financial performance $p=0.000<0.05$. According to Fiegenbaum and Karnani (1991), smaller firms are likely to be more profitable as compared to large firms due to their structure of costs. Liquidity significantly affected financial performance of listed firms at NSE $p=0.000<0.05$. In view of this finding, (Liargovas & Skandalis, 2010) established that firms with high liquid levels do not incur heavy financial costs compared to small firms that are characterized with limited funds.

Tangibility also had significant effect on financial performance of listed firms at NSE $p=0.000<0.05$. The age of the listed firms significantly influences their financial performance $p=0.000<0.05$. This finding contradicts Chiadamrong and

Sinthupundaja (2015) who established that age had no significant effect on performance.

4.5 Discussion of Research Findings

The findings of correlation and regression analysis indicated significant relationship between size, liquidity, tangibility and age of listed firms in relation to their financial performance. Similar findings were established by Chiadamrong and Sinthupundaja (2015) who examined how firm characteristics affect financial performance and established that size of the firm negatively impacted on leverage of the firms but positively impacted on liquidity and financial performance, liquidity lower financial performance of the firms while age had no significant effect on performance.

However, regression analysis established that leverage had insignificant effect on financial performance as opposed to correlation analysis where leverage was seen as a significant factor affecting financial performance of listed firms at NSE. Critically, one would expect the correlation analysis to hold; based on the trade off theory where levered firms enjoy interest tax shield that arises from the use of debts in their capital structures and therefore enhanced financial performance (Gaud, Jani, Hoesli & Bender, 2005). There is need however to balance between debts and equities in the capital structure as too much use of debts may set in bankruptcy of the firm as supported by Kraus and Litzenger (1973) who indicated that increased use of debts in the capital structure increase financial distress costs in terms of bankruptcy and this offsets the tax benefits of the debts.

As a significant firm specific characteristic affecting financial of listed companies on NSE, age categorizes firms into old and new. Aged firms have been in operations

for longer period of time, with large accumulation of human capital and machinery and therefore perform better than old firms (Usman & Zahid, 2011). Being in operations for longer period of time, old firms have largely expanded their operations in other areas exploiting other markets which increase the customer base and therefore profitability. It can therefore be argued that age and size of the firm are related specific characteristics that enhance performance of these firms. This observation is echoed by the Organizational Theory set forth by Baumann and Kaen (2003) to explain effect of the size and age of the firm on performance.

Asset tangibility and liquidity of listed firms were other specific characteristics of the firms that had significant effect on financial performance. Simply put, liquidity is the ability of the firm to meet its current obligations as and when they fall due using current assets. In terms of the trade off theory, an optimal level of liquidity is usually targeted by firms so as to balance the costs of holding cash which include low return rates on these assets and the tax benefits (Baumann & Kaen, 2003). Asset tangibility on the other as a significant factor represents proportional investment in fixed assets in relation to current assets. Firms with large amount of tangible assets easily access finances from lending and other financial institutions since these assets are placed as collaterals. According to (Myers, 2001), these assets pledged as collateral act as protection to lenders for any likely moral hazard that may arise out of the lending contractual agreement. Rajan and Zingales (1995) expounds on this further that firms with higher levels of tangible assets have higher chances of accessing the much needed financial resources to finance their positive net present value projects for improved shareholders' wealth.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the findings based on the study objectives. The conclusions and recommendations of the study are also clearly indicated in this chapter. The limitations of the study will be outlined and suggestions for further research made.

5.2 Summary of the Findings

Leverage had a mean of 0.51 with standard deviation of 0.349; Skewness was 3.78 and Kurtosis was 41.66. The findings of correlation analysis indicated that Leverage had Pearson Correlation of 0.470 with p value $p=0.000<0.05$; an indication of moderate positive significant relationship between leverage and financial performance of listed firms at NSE. According to Modigliani and Miller (1958), there was no effect of capital structure on value of the firm.

Liquidity had mean of 1.46, standard deviation of 1.755, skewness of 2.66 and Kurtosis of 9.69. From the correlation analysis results, liquidity had Pearson Correlation of 0.829 with p value $p=0.000<0.05$; hence liquidity significantly affected financial performance of listed firms at NSE. The findings of regression analysis indicated that liquidity significantly affected financial performance of listed firms at NSE $p=0.000<0.05$.

Size had a mean of 5.66, standard deviation of 2.508, skewness of -1.47 and Kurtosis of 0.88. Correlation analysis indicated that size had Pearson correlation of 0.564 with p value $p=0.000<0.05$. This indicates strong significant positive relation between size

as a specific firm characteristic and financial performance. Regression analysis results indicated that size of the firm had significant effect on financial performance $p=0.000<0.05$.

Asset Tangibility had a mean of 0.52, standard deviation of 0.285, skewness of 0.10 and Kurtosis of -1.35. The findings of correlation analysis indicated that From the correlation analysis results, asset tangibility had Pearson correlation of 0.564 with p a Pearson Correlation of 0.534 with p value $p=0.000<0.05$, showing statistically significant association between asset tangibility and financial performance of listed firms at NSE. From regression analysis, the study established that tangibility had significant effect on financial performance of listed firms at NSE $p=0.000<0.05$. .

Age had a mean of 1.04, standard deviation of 0.601, Skewness of -0.30 and Kurtosis of -0.48. Correlation analysis established that a Pearson Correlation of 0.560 with p value $p=0.000<0.05$; showing that age significantly influences financial performance of listed firms at NSE. Kristiansen, Furuholt, and Wahid (2003) established a direct relationship between the period in operation and firm performance within relevant ranges. From regression analysis, the age of the listed firms significantly influences their financial performance $p=0.000<0.05$. This finding contradicts with Chiadamrong and Sinthupundaja (2015) who established that age had no significant effect on performance.

5.3 Conclusion

There is a moderate relationship between leverage and financial performance of firms listed on NSE. This relationship is significant. Since the relationship was positive, it means that increase in leverage affected financial performance of firms listed on NSE.

Leverage can be increased by judiciously mixing debts and equities in the capital structure. This argument is enshrined in the trade off theory which compares the sizes of firms in relation to leverage. According to the trade off theory, size of the firms can either be small or large. Large firms have ability to access capital which increases appetite for debts and therefore leverage compared to small firms (Myers, 1997).

There exists a strong positive relationship between liquidity and financial performance of firms listed on NSE. Liquidity is a significant factors affecting financial performance of firms listed on NSE. As an ability of the firm to meet current obligations as and when they fall due, increase in liquidity enhances organization performance. The influence of liquidity on performance of firms is supported by the trade off theory; where in the process of maintaining liquidity, a firm tradeoff between keeping cash and the costs of holding cash. A firm can improve its performance by trading off between the above options which enhances liquidity positions (Gaud, Jani, Hoesli & Bender, 2005).

Size has a strong positive relationship with financial performance. Size significantly affects financial performance of firms listed on NSE. An argument of the how size affects financial performance is illustrated in organizational theory. According this organizational theory, large firms enjoy economies of scale that enhances effectiveness and efficiency in operations and therefore financial performance.

There exists a strong positive relationship between asset tangibility and financial performance of firms listed on NSE. Asset tangibility is a significant factor affecting financial performance of firms listed on NSE. Asset tangibility represents a proportional amount of tangible as compared to intangible assets. A significant

portion of tangible assets enhances liquidity positions of a firm which increases the ability to meet current obligation as and when they fall due.

There is a strong positive correlation between age and financial performance of firms listed on NSE. Age significantly affects financial performance of firms listed on NSE. A positive relationship of age indicates that old and mature firms are financially sound as compared to new firms in a given industry. The effect of age and performance of a firm is best explained by organizational theory formulated by Baumann and Kaen (2003) to explain how age affected firm performance.

5.4 Recommendations

The top management of all firms listed at NSE should judiciously combine both debts and equities in their capital structures to enhance the value of their firms. Management should take the interest tax shield accrued from the use of debts in their capital structure to enhance their financial performance. Too much use of debts in capital structure is risky as chances inability to meet interest and the principal debts increases. This may threaten bankruptcy which reduces shareholder confidence in the firm and therefore a slump in share prices.

Listed firms should strive to remain liquid at all times through efficient working capital management practices. This calls for management of cash, inventories, trade receivables and trade payables. Broadly speaking, liquidity can be enhanced through sound working capital management practices. Working capital is net of current assets and current liabilities. Working capital management involves setting up policies and regulations as it regards both current assets and liabilities.

The top management of listed firms should set up strategies of growth and expansion in sizes for example growth in market segments and shares. There are several strategies of growth that can be embraced by the management team of listed firms. One way of achieving growth is through mergers and acquisitions M & A s where a small firm in a given industry or NSE segment decides to merge with another larger firm resulting into one large firm that commands the entire market. Another way of achieving growth among listed firms is through integration (either horizontally or vertically) which results into operational efficiency and therefore improved performance.

5.5 Limitations of the Study

Some firms had undergone listing on NSE most recently for example Nairobi Securities Exchange ltd and therefore collection of data for some specified older durations they had not been in operations was a challenge. To overcome this, the study used the available data in the analysis. Other companies do not put up their financial statements on their websites at all making it difficult to collect data; to overcome this challenge, a variety of sources was used such as the central bank annual supervisory report for listed banks, Insurance Regulatory Authority IRA for listed insurance firms and NSE website to gather unavailable data.

Secondary data was collected using data collection sheet over a period of 5 years (2011 to 2015). The data collected was on annual sales, asset base, fixed and current assets, total equity, net profit and years since establishment. Secondary data was used as it was easier to access and collect for analysis to achieve the study objectives. The research applied descriptive research design to collect and analyze data over the period of consideration. This design appropriately helped to describe relationship

between firm characteristics and firm financial performance of firms listed in the Nairobi Securities Exchange. There are however other research designs that can be employed by researchers while carrying out similar related studies for example the exploratory designs and the cross sectional research design.

In the current study, the researcher adopted census approach in determination of the sample size. In this regard, all the elements of the population were included in the study. Future studies should however use other large population that permits use of appropriate techniques of sampling and sample size determination for example the use of Formula suggested by Kothari (2004).

5.6 Suggestions for Further Studies

Researchers can also examine the study further by looking out how macroeconomic indicators like interest rate and inflation affect financial performance, share prices and returns and financial growth. This is because the current study was only limited to firm specific characteristics although the macro economic factors also have an influence on financial performance of listed firms at NSE as revealed by past studies. Alternatively, macroeconomic indicators can be substituted with micro economic indicators like general consumer demand and supply, market related factors like competition.

In place of descriptive research designs, future studies should adopt cross sectional designs where the period of consideration is relatively longer. This calls for collection of Panel data. In analysis of the collected panel data, regression analysis could be substituted with other methods of analyzing panel data either by use of Fixed Effect FE or Random Effect RE. If possible, controlled trial experiments and testing of

hypothesis should be incorporated in future studies to enhance comparison of the findings.

As the current study was done among firms listed on NSE, there is need for similar studies in future among non listed firms for example Small and Medium Enterprise SMEs business in Kenya. There are several non listed firms that trade in shares through private placements which future studies should examine. Future studies can also be specific in studying either a single segment of the NSE or combining several segments of the NSE.

The analysis of the current study was supported by secondary data collected using data collection sheet. Future scholars should however employ both primary and secondary data and even carry out empirical reviews of past studies in the relation to the current one. The use of primary data will call for application of tools like questionnaires, interview guides and focused group discussions.

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APPENDICES

APPENDIX I: Firms Listed at the Nairobi Securities Exchange as at 31st December 2015

Agriculture	Manufacturing & Allied	Insurance
Kakuzi Ltd	B.O.C Kenya Ltd	British-American Investments Co.(Kenya) Ltd
Rea Vipingo Plantations Ltd	British American Tobacco Kenya Ltd	CIC Insurance Group Ltd
Sasini Ltd	Carbacid Investments Ltd	Jubilee Holdings Ltd
Eaagads Ltd Ord	East African Breweries Ltd	Kenya Re Insurance Corporation Ltd
Kapchorua Tea Co. Ltd Ord	Eveready East Africa Ltd	Liberty Kenya Holdings Ltd
The Limuru Tea Co. Ltd	Mumias Sugar Co. Ltd	Pan Africa Insurance Holdings Ltd
Williamson Tea Kenya Ltd	Unga Group Ltd	Energy & Petroleum
Automobiles & Accessories	A.Baumann & Co Ltd	KenGen Co. Ltd
Car & General (K) Ltd	Kenya Orchards Ltd	KenolKobil Ltd
CMC Holdings Ltd	Commercial and Services	Kenya Power & Lighting Co Ltd
Marshalls (E.A.) Ltd	Hutchings Biemer Ltd	Total Kenya Ltd
Sameer Africa Ltd	Kenya Airways Ltd	Umeme Ltd
Banking	Nation Media Group Ltd	Construction & Allied
Barclays Bank of Kenya Ltd	Scangroup Ltd	ARM Cement Ltd
CFC Stanbic of Kenya Holdings Ltd	Standard Group Ltd	Bamburi Cement Ltd
Diamond Trust Bank Kenya Ltd	TPS Eastern Africa Ltd	Crown Paints Kenya Ltd
Equity Bank Ltd	Uchumi Supermarket Ltd	E.A.Cables Ltd
Housing Finance Co.Kenya Ltd	Express Kenya Ltd	E.A.Portland Cement Co. Ltd
I&M Holdings Ltd	Longhorn Kenya Ltd	Investment services
Kenya Commercial Bank Ltd	Investment	Nairobi Securities Exchange Ltd
National Bank of Kenya Ltd	Centum Investment Co Ltd	
NIC Bank Ltd	Olympia Capital Holdings Ltd	
Standard Chartered Bank Kenya Ltd	Trans-Century Ltd Ord	
The Co-operative Bank of Kenya Ltd		

APPENDIX II: DATA COLLECTION SHEET

Year	Profitability	Size	Leverage		Liquidity		Tangibility		Age
	ROE	Total Assets	Total Liabilities	Total Assets	Current Assets	Current Liabilities	Fixed Assets	Total Assets	Period
2011									
2012									
2013									
2014									
2015									

APPENDIX III: COLLECTED DATA

Leverage	Liquidity	Size	Tangibility	ROE	Age
0	13.2	0	0.94	-4.13	3.3
0	8.58	0	0.93	-3.05	1.91
0	8.47	0	0.93	-2.83	1.9
0	8.29	0	0.93	-1.74	1.9
0	8.21	0	0.92	-0.86	1.89
0	8.08	0	0.91	-0.75	1.89
0	7.95	0	0.91	-0.69	1.81
0	7.03	0	0.89	-0.64	1.81
0	6.66	0	0.88	-0.53	1.81
0	6.58	0	0.88	-0.5	1.81
0	6.3	0	0.88	-0.41	1.8
0	6.13	0	0.87	-0.35	1.8
0	5.8	0	0.87	-0.31	1.79
0	5.67	0	0.87	-0.3	1.79
0	5.63	0	0.87	-0.28	1.79
0	5.5	0	0.87	-0.27	1.79
0	5.1	0	0.87	-0.25	1.79
0	4.91	0	0.86	-0.21	1.78
0	4.52	0	0.86	-0.17	1.77
0	4.51	0	0.86	-0.16	1.76
0	4.46	0	0.86	-0.13	1.76
0	4.4	0	0.86	-0.11	1.75
0	4.26	0	0.85	-0.11	1.75
0	4.22	0	0.85	-0.1	1.74
0	4.14	0	0.85	-0.1	1.74
0	3.96	0	0.85	-0.09	1.74
0.02	3.92	0	0.85	-0.09	1.74
0.03	3.84	0	0.84	-0.09	1.74
0.04	3.63	0	0.83	-0.08	1.73
0.05	3.39	0	0.83	-0.08	1.73
0.07	3.37	0	0.82	-0.08	1.73
0.08	3.35	0	0.82	-0.07	1.73
0.09	3.23	0	0.82	-0.06	1.73
0.12	3.02	0	0.82	-0.06	1.72
0.12	2.9	0	0.81	-0.05	1.72
0.13	2.9	0	0.81	-0.04	1.72
0.13	2.89	0	0.8	-0.04	1.72
0.13	2.83	0	0.8	-0.04	1.72
0.14	2.8	0.37	0.8	-0.03	1.72
0.14	2.76	0.38	0.79	-0.03	1.72

0.15	2.73	0.39	0.79	-0.03	1.72
0.15	2.59	0.4	0.79	-0.02	1.72
0.16	2.59	0.41	0.79	-0.01	1.72
0.16	2.56	0.65	0.79	-0.01	1.72
0.17	2.52	0.7	0.78	-0.01	1.71
0.18	2.52	0.71	0.78	-0.01	1.71
0.18	2.48	0.77	0.77	-0.01	1.71
0.19	2.46	0.83	0.77	-0.01	1.71
0.19	2.46	1.5	0.77	-0.01	1.7
0.19	2.41	3.5	0.77	0	1.69
0.2	2.41	4.05	0.77	0	1.68
0.2	2.37	4.08	0.77	0	1.66
0.21	2.36	4.08	0.77	0	1.65
0.22	2.33	4.09	0.77	0	1.65
0.22	2.29	4.11	0.76	0	1.64
0.22	2.27	4.55	0.76	0	1.64
0.23	2.27	4.66	0.75	0	1.64
0.23	2.25	4.73	0.74	0	1.64
0.23	2.23	4.83	0.74	0	1.63
0.24	2.21	4.86	0.74	0	1.63
0.24	2.2	4.87	0.72	0	1.63
0.25	2.18	4.93	0.72	0	1.63
0.25	2.17	4.96	0.72	0	1.63
0.25	2.17	4.98	0.72	0	1.62
0.25	2.14	5.01	0.71	0	1.62
0.25	2.13	5.01	0.71	0	1.62
0.26	2.12	5.02	0.71	0	1.62
0.26	2.08	5.06	0.71	0	1.62
0.27	2.08	5.09	0.69	0	1.62
0.27	2.06	5.1	0.69	0	1.62
0.27	2.05	5.2	0.69	0	1.61
0.28	2.04	5.24	0.69	0	1.61
0.28	1.98	5.36	0.68	0	1.61
0.28	1.98	5.59	0.68	0	1.61
0.28	1.94	5.65	0.68	0	1.61
0.28	1.91	5.67	0.68	0	1.61
0.28	1.9	5.7	0.68	0	1.6
0.28	1.87	5.71	0.68	0	1.6
0.28	1.87	5.71	0.68	0	1.6
0.28	1.82	5.74	0.68	0	1.6
0.29	1.77	5.76	0.68	0	1.6
0.29	1.77	5.77	0.67	0	1.6
0.29	1.77	5.79	0.67	0.01	1.59
0.29	1.76	5.82	0.67	0.01	1.59

0.3	1.75	5.88	0.66	0.01	1.59
0.3	1.74	5.89	0.66	0.01	1.59
0.31	1.72	5.91	0.66	0.01	1.59
0.31	1.67	5.91	0.66	0.01	1.58
0.31	1.66	5.91	0.66	0.02	1.58
0.31	1.65	5.91	0.65	0.02	1.58
0.32	1.64	5.92	0.65	0.02	1.58
0.32	1.64	5.92	0.65	0.02	1.57
0.32	1.64	5.92	0.65	0.02	1.57
0.32	1.62	5.93	0.64	0.02	1.56
0.34	1.6	5.93	0.64	0.02	1.56
0.34	1.6	5.96	0.64	0.03	1.56
0.34	1.59	5.96	0.64	0.03	1.54
0.34	1.59	5.98	0.63	0.03	1.54
0.35	1.59	5.98	0.63	0.03	1.53
0.35	1.55	5.99	0.63	0.03	1.52
0.35	1.54	5.99	0.63	0.03	1.51
0.36	1.54	6.01	0.63	0.04	1.48
0.36	1.53	6.03	0.62	0.04	1.46
0.36	1.53	6.04	0.62	0.04	1.46
0.38	1.52	6.05	0.62	0.04	1.45
0.38	1.52	6.06	0.62	0.04	1.45
0.38	1.52	6.06	0.62	0.04	1.43
0.38	1.51	6.06	0.62	0.04	1.43
0.38	1.5	6.07	0.62	0.04	1.41
0.38	1.5	6.07	0.62	0.04	1.41
0.39	1.49	6.08	0.62	0.04	1.41
0.39	1.49	6.08	0.61	0.04	1.41
0.39	1.49	6.09	0.61	0.04	1.4
0.39	1.48	6.1	0.61	0.04	1.4
0.39	1.46	6.11	0.61	0.04	1.4
0.4	1.45	6.11	0.61	0.05	1.4
0.4	1.42	6.11	0.6	0.05	1.38
0.4	1.38	6.13	0.6	0.05	1.38
0.4	1.33	6.13	0.6	0.05	1.38
0.4	1.33	6.14	0.6	0.05	1.36
0.41	1.31	6.14	0.6	0.05	1.36
0.41	1.31	6.14	0.6	0.05	1.36
0.41	1.3	6.14	0.6	0.05	1.36
0.42	1.3	6.14	0.58	0.06	1.34
0.42	1.3	6.14	0.58	0.06	1.34
0.42	1.3	6.15	0.58	0.06	1.34
0.43	1.28	6.15	0.57	0.06	1.34
0.43	1.28	6.15	0.57	0.06	1.34

0.43	1.27	6.15	0.57	0.06	1.32
0.43	1.26	6.17	0.57	0.07	1.32
0.43	1.26	6.18	0.55	0.07	1.32
0.44	1.26	6.19	0.55	0.07	1.32
0.44	1.25	6.21	0.55	0.07	1.3
0.45	1.24	6.23	0.54	0.07	1.3
0.45	1.24	6.24	0.54	0.07	1.3
0.45	1.22	6.25	0.53	0.07	1.3
0.45	1.22	6.26	0.53	0.07	1.28
0.45	1.22	6.28	0.53	0.07	1.28
0.45	1.22	6.29	0.52	0.08	1.28
0.46	1.21	6.31	0.52	0.08	1.28
0.46	1.2	6.31	0.51	0.08	1.26
0.47	1.2	6.33	0.51	0.08	1.26
0.47	1.18	6.38	0.51	0.08	1.26
0.47	1.18	6.38	0.51	0.08	1.26
0.48	1.17	6.39	0.5	0.08	1.23
0.48	1.17	6.39	0.49	0.08	1.23
0.49	1.16	6.41	0.49	0.08	1.23
0.49	1.16	6.43	0.49	0.09	1.2
0.5	1.16	6.43	0.49	0.09	1.2
0.5	1.16	6.44	0.47	0.09	1.18
0.51	1.14	6.44	0.46	0.09	1.18
0.51	1.14	6.45	0.45	0.09	1.15
0.51	1.13	6.45	0.42	0.09	1.15
0.51	1.13	6.45	0.42	0.09	1.15
0.51	1.12	6.45	0.39	0.09	1.15
0.52	1.12	6.47	0.39	0.1	1.11
0.53	1.12	6.49	0.39	0.1	1.11
0.53	1.12	6.5	0.39	0.1	1.11
0.53	1.11	6.5	0.38	0.1	1.11
0.53	1.1	6.51	0.37	0.1	1.11
0.53	1.1	6.51	0.37	0.1	1.08
0.54	1.09	6.53	0.37	0.1	1.08
0.54	1.09	6.53	0.36	0.11	1.08
0.54	1.09	6.54	0.35	0.11	1.08
0.54	1.08	6.54	0.35	0.11	1.08
0.54	1.07	6.55	0.35	0.11	1.08
0.55	1.06	6.56	0.35	0.11	1.08
0.55	1.06	6.56	0.35	0.11	1.08
0.55	1.04	6.56	0.34	0.11	1.04
0.55	1.03	6.56	0.34	0.11	1.04
0.55	1.03	6.56	0.33	0.11	1.04
0.56	1.02	6.57	0.33	0.11	1.04

0.57	1.02	6.58	0.33	0.11	1.04
0.57	1.01	6.58	0.32	0.11	1.04
0.57	0.98	6.59	0.32	0.11	1.04
0.57	0.98	6.59	0.32	0.11	1.04
0.57	0.97	6.6	0.31	0.12	1
0.57	0.97	6.61	0.31	0.12	1
0.57	0.95	6.61	0.31	0.12	1
0.58	0.95	6.62	0.31	0.12	1
0.58	0.95	6.63	0.31	0.12	1
0.59	0.95	6.64	0.3	0.13	1
0.59	0.94	6.65	0.3	0.13	1
0.6	0.93	6.65	0.3	0.13	0.95
0.6	0.93	6.65	0.3	0.13	0.95
0.6	0.92	6.66	0.29	0.13	0.95
0.61	0.91	6.68	0.29	0.13	0.95
0.61	0.9	6.68	0.29	0.13	0.95
0.61	0.89	6.69	0.28	0.14	0.95
0.61	0.87	6.69	0.28	0.14	0.95
0.61	0.84	6.7	0.28	0.14	0.95
0.62	0.84	6.7	0.28	0.14	0.9
0.62	0.8	6.71	0.27	0.14	0.9
0.62	0.8	6.71	0.27	0.14	0.9
0.62	0.77	6.73	0.27	0.14	0.9
0.63	0.74	6.74	0.27	0.15	0.9
0.64	0.72	6.74	0.27	0.15	0.9
0.65	0.72	6.76	0.27	0.15	0.9
0.65	0.71	6.76	0.26	0.15	0.9
0.65	0.7	6.78	0.26	0.15	0.9
0.66	0.7	6.79	0.26	0.15	0.9
0.67	0.69	6.79	0.26	0.15	0.9
0.67	0.67	6.8	0.26	0.15	0.85
0.67	0.65	6.8	0.25	0.15	0.85
0.67	0.64	6.81	0.25	0.15	0.85
0.68	0.64	6.81	0.25	0.15	0.85
0.68	0.63	6.83	0.24	0.15	0.85
0.68	0.62	6.86	0.24	0.15	0.85
0.68	0.59	6.86	0.23	0.16	0.85
0.68	0.56	6.86	0.23	0.16	0.85
0.69	0.56	6.87	0.23	0.16	0.85
0.69	0.51	6.89	0.22	0.16	0.85
0.69	0.47	6.91	0.22	0.16	0.85
0.7	0.46	6.92	0.22	0.16	0.78
0.7	0.46	6.92	0.21	0.16	0.78
0.7	0.44	6.93	0.2	0.16	0.78

0.7	0.41	6.93	0.19	0.16	0.78
0.7	0.4	6.93	0.19	0.16	0.78
0.7	0.4	6.96	0.19	0.16	0.78
0.71	0.38	6.96	0.19	0.17	0.78
0.72	0.35	6.96	0.19	0.17	0.78
0.72	0.34	6.98	0.19	0.17	0.78
0.72	0.33	7	0.18	0.17	0.78
0.72	0.33	7.01	0.18	0.17	0.78
0.73	0.32	7.01	0.18	0.17	0.78
0.74	0.31	7.01	0.18	0.17	0.73
0.74	0.3	7.03	0.18	0.17	0.7
0.74	0.28	7.03	0.18	0.18	0.7
0.75	0.28	7.04	0.18	0.18	0.7
0.75	0.26	7.04	0.18	0.18	0.7
0.75	0.23	7.06	0.18	0.18	0.7
0.75	0.23	7.06	0.18	0.18	0.7
0.75	0.23	7.07	0.18	0.19	0.7
0.75	0.23	7.07	0.18	0.19	0.7
0.76	0.23	7.07	0.17	0.19	0.7
0.76	0.23	7.08	0.17	0.19	0.7
0.77	0.23	7.11	0.17	0.19	0.7
0.77	0.22	7.11	0.17	0.19	0.7
0.77	0.22	7.12	0.17	0.19	0.7
0.78	0.22	7.12	0.17	0.19	0.7
0.78	0.21	7.13	0.17	0.19	0.6
0.78	0.21	7.13	0.17	0.19	0.6
0.8	0.21	7.14	0.16	0.19	0.6
0.8	0.21	7.14	0.16	0.2	0.6
0.81	0.21	7.15	0.16	0.2	0.6
0.81	0.21	7.15	0.16	0.2	0.6
0.81	0.21	7.16	0.16	0.2	0.6
0.81	0.2	7.16	0.16	0.2	0.6
0.81	0.2	7.16	0.16	0.2	0.6
0.82	0.2	7.17	0.16	0.2	0.6
0.82	0.2	7.18	0.16	0.21	0.6
0.82	0.2	7.18	0.16	0.21	0.6
0.82	0.19	7.19	0.16	0.21	0.6
0.82	0.19	7.19	0.16	0.21	0.51
0.82	0.19	7.2	0.16	0.21	0.48
0.82	0.19	7.2	0.15	0.21	0.48
0.82	0.19	7.2	0.15	0.21	0.48
0.82	0.19	7.22	0.15	0.21	0.48
0.82	0.19	7.23	0.15	0.21	0.48
0.83	0.19	7.24	0.15	0.21	0.48

0.83	0.19	7.24	0.15	0.21	0.48
0.83	0.19	7.24	0.15	0.21	0.48
0.83	0.18	7.25	0.15	0.22	0.48
0.83	0.18	7.27	0.15	0.22	0.48
0.83	0.18	7.28	0.14	0.22	0.48
0.83	0.18	7.3	0.14	0.22	0.3
0.83	0.18	7.35	0.14	0.22	0.3
0.84	0.17	7.35	0.14	0.22	0.3
0.84	0.17	7.35	0.14	0.23	0.3
0.84	0.17	7.37	0.14	0.23	0.3
0.84	0.17	7.38	0.14	0.23	0.3
0.84	0.17	7.38	0.14	0.23	0.3
0.84	0.17	7.41	0.13	0.23	0.3
0.84	0.16	7.48	0.13	0.23	0.3
0.84	0.16	7.53	0.13	0.23	0.3
0.84	0.16	7.53	0.13	0.24	0
0.84	0.16	7.54	0.13	0.24	0
0.84	0.16	7.55	0.13	0.24	0
0.84	0.15	7.56	0.13	0.24	0
0.84	0.15	7.57	0.12	0.24	0
0.84	0.15	7.59	0.12	0.24	0
0.85	0.15	7.65	0.12	0.24	0
0.85	0.15	7.68	0.1	0.25	0
0.85	0.15	7.74	0.1	0.25	0
0.85	0.15	7.76	0.09	0.25	0
0.85	0.14	7.77	0.08	0.25	0
0.85	0.14	7.79	0.02	0.25	0
0.85	0.14	7.79	0	0.26	0
0.85	0.12	7.8	0	0.26	0
0.85	0.11	7.81	0	0.26	0
0.85	0.1	7.81	0	0.26	0
0.85	0.1	7.89	0	0.26	0
0.85	0	7.94	0	0.26	0
0.86	0	7.96	0	0.26	0
0.86	0	8	0	0.26	0
0.86	0	8.02	0	0.27	0
0.86	0	8.03	0	0.28	0
0.86	0	8.03	0	0.28	0
0.86	0	8.03	0	0.28	0
0.86	0	8.04	0	0.28	0
0.86	0	8.04	0	0.29	0
0.86	0	8.07	0	0.3	0
0.87	0	8.07	0	0.3	0
0.87	0	8.08	0	0.3	0

0.87	0	8.09	0	0.3	0
0.87	0	8.09	0	0.31	0
0.87	0	8.14	0	0.32	0
0.87	0	8.16	0	0.33	0
0.87	0	8.19	0	0.33	0
0.87	0	8.21	0	0.35	0
0.88	0	8.23	0	0.36	0
0.88	0	8.28	0	0.36	0
0.88	0	8.29	0	0.36	0
0.88	0	8.35	0	0.37	0
0.89	0	8.41	0	0.37	0
0.89	0	8.81	0	0.38	0
0.9	0	8.84	0	0.41	0
0.91	0	9.2	0	0.45	0
0.92	0	9.25	0	0.46	0
4.3	0	9.36	0	0.49	0