INTELLECTUAL CAPITAL, CHIEF EXECUTIVE OFFICER TENURE AND FINANCIAL PERFORMANCE OF FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE, KENYA

BY

CHELOGOI KIMUTAI STEPHEN

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DECLARATION

Declaration by the Student

This research thesis is my original work and has not been presented for degree in any university elsewhere.

Signature: _____ Date_____

Stephen Kimutai Chelogoi
SBE/D.PHIL/BM/010/11

Declaration by the Supervisor

This research thesis has been submitted with our approval as Moi University Supervisors.

Signature: _____ Date_____

Dr Joel Tenai

Department of Accounting and Finance
School of Business and Economics
Moi University

Signature: _____ Date_____

Dr. Josephat Cheboi

Department of Accounting and Finance
School of Business and Economics
Moi University

DEDICATION

This work is dedicated to my lovely wife Everline and my children Kevin, Ivy, and Lyn, who have seen its evolution over time, supported me constantly, morally, financially throughout the process as the thesis move one step to another height. Your understanding and support will forever be remembered by me. Thanks to you all.

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ABSTRACT

It is expected that companies listed in the Security Exchange may have strong financial performance rates. Despite the popular belief among scholars that intellectual capital efficiency has a significant effect on firm financial results, evidence from financial management studies that support this proposition has presented have been varied. Given the aforesaid, the objective of the study was to investigate the relationship between Intellectual capital efficiency firm's financial performance and how chief executive officer's tenure moderating the relationship between intellectual capital elements and financial performance of firms in Kenya. This study was informed by Agency theory, Dynamics capability, and Resource-based theory. A longitudinal research design was used. The study targeted 67 firms in Nairobi Security Exchange. The study used secondary data (financial reports) to obtain financial performance information from 48 firms with full information from Capital Market Authority Statistical Bulletins and Nairobi Securities Exchange Handbook for a period of twelve years from 2006 to 2017. Data were analysed using both descriptive and inferential statistics. Specifically, Pearson's correlation coefficient, standard multiple regression analysis, and hierarchical multiple regression analysis were adopted to analyse and test the hypotheses. The study established a positive and significant effect between Human capital ($\beta = 0.18$; $\rho<0.05$), Structural capital ($\beta = 0.11$; $\rho>0.05$), Capital employed and firm financial performance ($\beta = 0.95$; $\rho<0.05$) and Innovation capital ($\beta = 0.14$; $\rho<0.05$). The sum of the intellectual capital coefficient had a positive and significant effect on Firm Financial Performance ($\beta= 0.02$, $\rho<0.05$). The moderating variable CEO tenure had a positive and significant relationship between Intellectual Capital on financial performance ($\beta = 0.04$; $\rho<0.05$). When the independent variables were moderated with CEO tenure the study findings indicated CEO tenure moderated the relationship between Human capital and financial performance ($\beta= -0.12$; $\rho<0.05$), Structural capital and firm financial performance ($\beta= 0.01$; $\rho<0.05$), Capital Employed and firm financial performance($\beta= 0.005$; $\rho<0.05$), Innovation capital and firm financial performance ($\beta= -0.03$; $\rho<0.05$) and Modified Value Added Intellectual confident and firm financial performance ($\beta= 0.14$; $\rho<0.05$), hence the existence of moderating effect of Chief Executive Officer tenure on the relationship between the three intellectual capital components and firm financial performance and VAIC. The study concludes that in determining financial performance levels among firms in the Nairobi Securities Exchange, human capital, and capital employed, and innovation capital and VAIC are significant. In general, CEO tenure equally enhances the influences on financial performance levels given the intellectual capital efficiency. The results support the Agency theory, Dynamic Capability Theory, and Resource-based theory by clarifying how the organization decision-makers build, assemble, and recombine internal and external capabilities to answer quickly shifting the firm's financial environments. This study has brought to the fore significant evidence that will help in generating an additional improvement on the understanding of Intellectual components and their effect on the firm's financial performance moderated by CEOs' tenure both empirically and methodologically. It offers evidence to the regulatory bodies as well as academicians with an understanding of Intellectual Capital components practices in the annual report of firms listed in Nairobi Security Exchange. The study contributes to the on-going discussions on the rationality of linking intellectual capital components to the traditional accounting-based measures to enhance firm financial performance.

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DEFINITION OF TERMS

Financial Performance: This is a measure of a company's ability to turn raw assets into monetary income. It indicates the general financial strength of a firm at any given time. In the current study, it was measured by Tobin's Q.

Intellectual Capital: The knowledge-based equity of organizations/the combined intangible and tangible assets to create corporate value.

Human Capital: It is the main element of Intellectual Capital, and refers to the knowledge that exists in the minds of individuals and their experiences; they constitute strategic resources of firms and a prerequisite for success.

Innovation Capital: This is the overall ability of a company to generate value and it was measured by the amount spent on R and D by a firm.

Structural Capital: This refers to all the invisible assets that effectively and efficiently define and support all of a firm's business engagements.

Capital Employed: The sum of all assets employed by a business. It comprises investors' contribution or equity capital and long-term liabilities or loan capital.

CEO Tenure: Refers to the period of time a person assumes the role of a CEO and the ending year in the given firm.

LIST OF ABBREVIATIONS AND ACRONYMS

AIM	Alternative Investment Markets
CE:	Capital Employed
CEE:	Capital Employed Efficiency (VAIC™)
CEO	Chief Executive Officer
CMA	Capital Markets Authority
ETS	Electronic Trading System
HC:	Human Capital
HCE:	Human Capital Efficiency (VAIC™)
FISM	Fixed Income Securities Market
INC:	Innovation capital
INCE:	Innovation capital Efficiency (VAIC™)
IC:	Intellectual Capital
ICE:	Intellectual Capital Efficiency (VAIC™)
MVAIC:	Modified Value-Added Intellectual Coefficient (VAIC™)
NSE	Nairobi Securities Exchange
OLS	Ordinary Least Squares
R&D:	Research and development
ROE	Return on Equity
ROI	Return on Investment
SMEs	Small and Medium Enterprises
SC:	Structural Capital
SCE:	Structural Capital Efficiency (VAIC™)
SPSS	Statistical Package for Social Sciences
VA:	Value Added
VAIC™:	Value Added Intellectual Coefficient
VIF	Variance Inflation Factor

CHAPTER ONE
INTRODUCTION

1.1 Overview

This section outlines the background to the study, statement of the problem, objectives guiding the study, research hypotheses to be tested, significance arising from the study findings, and the scope of the study.

Recently, the complexities of the global business environment characterized by growing market competition and advancing technological developments, have created a high level of uncertainty among companies in all industries, reinforcing the need for corporate organizations to be more vigilant about the business success (Gavrea, Ilies, & Stegerean, 2011). Financial performance is perhaps the most critical thing. This hyper-competition entails continuously enhanced performance, which is the objective of any company since organizations can flourish and progress only through success.

Concerning the intermediation aspect, firms ' financial performance has significant implications for countries ' economic development. Good financial performance reflects the investors ' investment (Palaniappan, 2017). It, in turn, fosters additional investment and leads to economic development. Poor corporate performance, in contrast, may lead to firm collapse and crises that have negative effects on economic growth. Therefore, since the Great Depression that ended in (the 1920s), analysis of the financial performance of listed companies has gained traction among scholars across the world.

The concept of performance of the firm has gained prominence in the research agenda of corporate finance. Profitable companies are creating wealth, hiring people, encouraging creativity, and paying taxes where profits increase. Consequently, while

most of the listed companies in the NSE have posted better performance, others have encountered diminishing fortunes and subsequently brought under receipt. Finding out the impact of elements of intellectual capital on financial performance may offer understanding into what drives up and down performance at NSE and provide valuable lessons for both business and policymakers. Although indicators of the financial performance of publicly-traded companies in developed economies have been extensively researched, their results are mixed or non-existent of such a study in Securities Exchange in Kenya calls for one.

A company improves its performance by acquiring or creating a resource or resource combination that allows it to outperform its competitors (Muhammad and Ismail, 2009). There is no question that high-performance firms are those that evolve constantly, focusing on their workers ' skills, knowledge, and technology instead of resources such as equipment. Intellectual capital has been dubbed the new engine for corporate development to generate new awareness (Muhammad and Ismail, 2009).

Understanding the determinants of organizational performance is therefore important, as it makes it possible to recognize certain factors that should be treated with increased interest to improve financial performance. It is increasingly recognized that any organization's success depends significantly on its employees ' understanding, implementation, and integration. Successful companies rely more on workers ' skills and knowledge than on tangible assets. Dženopoljac, Janoševic, & Bontis, (2016) contend that the knowledge economy supports the fact that business depends on wealth creation through development, activity, and consumption of the company’s intellectual capital.

Many researchers have attested that the knowledge-led economy is now the leading form of business. Industries need to focus on growth and stability for intellectual capital-output (Jordão & Almeida, 2017; Sardo, Serrasqueiro, & Alves, 2018). The significance of Intellectual Capital (IC) has a world view of enhanced business results. Intellectual capital (IC) is considered a source of assets and financial performance driver, thereby establishing both market competitive advantage and sustainability. To the extent that financial goals are or have been achieved financial performance applies to that extent. It was used always for a while and could even be used to compare similar firms with the general economic performance of a company (Oyedokun & Babale, 2018) to argue that money performance may be a parameter that dictates, but rather an organization makes completely different components. Intellectual capital (IC) is a term that has gained ground significantly because companies are increasingly designing models based on knowing where the human factor plays a central role (Shamsuddin et al., 2015). The specific experience, expertise, principles, and strategies of each business can be converted into a market value that can, in turn, affect profitability and enhance performance and maritime quality (Pulic, 2002). The function of intellectual capital in an agency is to create worth throughout the efficient management of its scarce resources. this can successively boost the overall performance of the company (Bijani and Ranani, 2014). In the past, companies' success, profitableness, and rate the essential rely upon tangible property like land, infrastructure, and instrumentation (Nuryaman, 2015). At some point in this generation of intelligence, intellectual capital has developed as an essential aspect of the attention of the business. Intellectual capital involves the complex process of collection of resources such as information, expertise, networks, functional processes as well as organizational and individual relations that create firm

value (Demartini & Trucco, 2016). In the current era of globalization, economic-sector technological developments triggered firms to implement management strategies from labor-based firms to knowledge-based firms (Purwaningsih, 2018). As a result, more emphasis has also been given to the value of intellectual capital among corporate management. Capital is considered a catalyst among a firm's performance. Among early studies, human capital and institutional capital consisted of intellectual capital. HC, IC's base, is directly related to employees (such as ability, engagement, motivation, and loyalty of employees). Innovative capital, social capital, and institutional assets are included in systemic capital (DeMartini & Trucco, 2016). Several researchers have empirically verified the intellectual capital relationship with the financial performance of the company and have mixed findings (Jummaini, Nasir, Faisal, & Hasan, 2019; Triastuty & Riduwan, 2017; Ismiyanti & Rebbica, 2017). They established that there was a positive relationship between the IC and the company's financial performance. Pongpearchan (2016) notes that IC is a key component for corporations to excel and create a competitive advantage. In the same vein (Rezvan, Mehrdad, & Mohammad, 2016) undertook an investigation to establish the effect of intellectual, social, and structural capital on firm performance among 100 listed companies at the Tehran Stock Exchange. Their study established that intellectual capital had a strong relationship with performance. On the contrary, a report by (Oyedokun & Babale, 2018) on the analysis of the effects of intellectual capital on Nigerian oil marketing firms ' financial performance from 2007 to 2016 revealed that the market for book value had a significantly negative influence on Nigerian oil and marketing companies ' financial performance. Despite the IC's utmost importance and role in organizational performance, empirical research remains scarce to explore IC's individual dimensional effect on organizational performance.

Besides, in developed nations, human capital has been studied extensively but less widespread in developing countries (Waseem & Loo-See, 2018). Despite recognizing intellectual capital as a key business engine, it has not fully explored its profound impact within and outside the group. In particular, empirical studies on intellectual capital and organizational performance posed contradictory threads that yield inconsistent and inconclusive results of a study (Kariuki, 2014). Based on the above discussion, it seems as though scholars have endeavored to examine the relationship between intellectual capital and performance other variables that affect the relationship have not yet been properly examined. Therefore, as moderated by CEO tenure, this was not fully discussed in the Security exchange of how an intellectual capital improves economic efficiency. CEOs should also optimize their company's value. While this fundamental role extends to all workers in a corporation, the CEO tends primarily to be responsible for this core organizational function and reports directly to the board of their company (Oliveira et al. 2010). Although CEOs bear this ultimate responsibility, they are usually given broad power within their corporations and are charged with the overall management, strategy, and direction of their company CEOs delegate at least part of the decision process to others involving their company's capital structure, payouts, investments and capital allocation (National Bureau of Economic Research, 2015). Studies conducted by (Kianto et al. 2013) show a positive correlation between intellectual capital and the growth of the organization. Nevertheless, the observations of Salchi et al (2014) did not reveal any statistical proof to support an intellectual capital correlation that VAIC noticed. The relationship between organizational capital capacity, human capital productivity, the economic added value, and corporations ' financial performance was analyzed by Salchi et al.

(2014). Such findings show that, except for the ties entre systemic capital efficacy, economic value-added, and financial performance, all relationships are relevant.

Studies by Plink and Barning, (2015) conclude that human capital had positive impacts on organizational performance Appuhami (2007) and Yusuf (2013) studied the connection between human capital efficiency and economic outcomes. Findings from their study established that no significant correlation existed between HCE and investor capital gains. Bontis, et.al, (2000), Maddocks and Beaney (2002), and Onyekwelu (2016) examined Intellectual Capital's effect on financial valuation. SCE displayed a negative and no significant relationship to the criteria used in the assessment of corporate values. Chen et al. (2014); Berger and Bouwman (2013), on Capital employed, results suggested that Capital employed performance (CEE) consistently increases the company's sustainability, likelihood, and profit margins. Zou & Huan (2011) Study of intellectual capital's performance and implications.

Due to the current unpredictable and contradictory outcome of organizational innovation empirical, research studies on creative resources in organizations remain undeveloped (Keupp, Palmié, and Gassmann, 2011). Findings by Nascimento et al. (2012) on innovative capital and firm performance show that there were no gaps between all examined categories.

1.2 The Nairobi Securities Exchange (NSE)

The shares deal with the sale of publicly traded companies ' bonds. As a mutual broker organization, Nairobi Security Exchange (NSE) instituted in 1954 is now one of Africa's most competitive markets. Uncertainty over the prospects of Kenya's independence caused the stock exchanges to slump. Ngugi and Njiru (2010) state that

trust in the stock market has been restored after three years of tranquility and economic growth. Increasing the trust of shareholders was the result of the restructuring of the NSE.

In 2006, the NSE launched the electronic trading system (ETS). The year after the introduction of an extensive network (WAN) system removed the need for agents to assign their workers to companies. NSE dealing at the brokers ' offices is now conducted on-line. The financial distress of the 2007/2008 financial year concentrated on defense exchange activities in Kenya. Therefore, in particular legal and organizational reforms, which are in line with global standards, NSE has experienced several critical innovations.

The trading of stocks at the NSE has grown considerably over time. Ngugi and Njiru (2010) in their study stated that the NSE came into being in the 1920s. During this period, the trading of shares was done informally by the European community. Africans and Asians were prohibited from dealing in securities. The MAL (MIM) market, the Alternative Investment Markets (AIM), the Fixed Income Securities Market (FISM) segment was restructured in 2001, into three divisions. The MIM is the largest pool market, and the AIM gives the SMEs an alternative method of raising capital. With fixed-income investments like treasury bonds, corporate bonds, preferred shares, and debenture stocks and short-term financial instruments, such as treasury bills, the FISMS has a separate market.

Thirikwa and Olweny (2015) discovered that firms listed at the NSE have been experiencing high volatility in stock prices. He found the NSE uncertainty of share prices. Thirikwa and Olweny (2015) did a survey on domesticating determinants in the NSE and concluded that herding exists in the NSE and that book-to-market value

and earnings deviation in safety yields are present. Olweny and Waweru (2016) evaluated the asymmetric and continuous volatility of stocks in the NSE market phases; found that stocks listed in the NSE experience consistent peaks and troughs leading to bear and bull cycles.

Although a few researchers have sought to link intellectual capital with economic outcomes from a financial management perspective, they have failed to specify the mechanism as to how CEO tenure can moderate intellectual capital efficiencies to enhance or inhibit solid financial performance. In relation, these studies did not take into perspective the African business context in which security exchanges presently exist with the ability to provide rich ground for growth in the economy. Diverse empirical research on intellectual capital and the company's financial efficiency has produced mixed results because of the varied technique of measuring intellectual capital. A variety of theoretical and methodological gaps have to be tested, in particular. From the theoretical perspective, the principal gaps are attributed to the factors that influence significant economic performance and the relationship between intellectual capital and their causal and temporal relationship. From a methodological viewpoint, the primary gaps are linked to the components that make up intellectual capital that is most accepted.

1.3 Statements of the Problem

Higher economic performance in the Security Exchange market is expected to reflect their health and ultimately survival. The high financial outcome indicates the efficiency and effectiveness of management in utilizing a firm’s resources, which would, in turn, contribute to the economic growth of the country as a whole. However, recent trends demonstrate that several corporate failures have emerged

throughout the world Securities Exchanges. A study by Maina and Sakwa (2012) revealed uneven performance at the Securities Exchanges coupled with various factors related to changes in management, governance, risk profile, or profitability appetite.

According to the NSE (2010), the Capital Markets Authority (CMA) has put under statutory management several public and private companies including Invesco Assurance (2008), Pan Paper Mills and Standard Assurance, (2009), and Uchumi Supermarkets (2006), Kenya Planters Co-operative Union (KPCU) (2010) and Hutchings Beimer (2010). Ngugi et al., (2009) postulated that to end failures of businesses, companies listed at the NSE should be financially healthy. Significant efforts to turn around such companies or even liquidate them have focused mainly on financial policies and restructuring. Studies increasingly indicate that firm financial performance may be influenced by Intellectual capital components utilizing the Value-added intellectual coefficient (VAIC^{TM}) model. Mixed results have been yielded by various studies using VAIC. For instance, Shiu (2006) and Appuhami's (2007) findings indicated a weak efficiency-to-VAIC relationship. Chen et al. (2005) concluded that IC drives strong value and economic performance, however, Firer and Williams (2003) and Chan (2009) concluded that Intellectual Capital puts less importance on companies and individuals than it is on economic resources. Consequently, in the study of Laing et al. (2010), Mehri et al. (2013) and Ozkan, et al (2016) on IC-financial outcome ties in Malaysia, a positive and significant relationship was established. Furthermore, regarding the components of VAIC, Najibullah (2005), Liargovas & Skandalis (2008), Abdulsalam et al. (2011), Lina (2014) and Berzkalne and Zelgalve (2014), Meressa's (2015) and Demissie's (2016) their study findings were mixed.

Given the mixed results from past empirical researches, there is a need for additional investigations to support and explain the association amongst the study variables, and more testing interaction effects are called for. This study filled the above gap by evaluating the moderating role of CEO tenure while investigating the effect of intellectual capital on firm financial performance among firms listed in Nairobi Securities Exchange Kenya.

1.4 Objective of the study

1.4.1 General objectives

To investigate the effects of intellectual capital on firm financial performance and the moderating effects of CEO tenure among firms listed in Nairobi Security Exchange.

1.4.2 Specific objectives

The study's specific objectives were to:

1. Determine the effect of human capital on financial performance of firms listed in Nairobi Security Exchange.
2. Evaluate the effect of structural capital on financial performance of firms listed in Nairobi Security Exchange.
3. Examine the effect of capital employed on financial performance of firms listed in Nairobi Security Exchange
4. Establish the effect of innovation capital on financial performance of firms listed in Nairobi Security Exchange.
5. Evaluate the effect of intellectual capital on financial performance of firms listed in Nairobi Security Exchange.
6. Analysis the effect of CEO tenure on financial performance of firms listed in Nairobi Security Exchange.

7a. Ascertain the moderating effect of CEO tenure on the relationship between human capital and financial performance of firms listed in Nairobi Security Exchange.

7b. Investigate the moderating effect of CEO tenure on the relationship between structural capital and financial performance of firms listed in Nairobi Security Exchange

7c. Explore the moderating effect of CEO tenure on the relationship between capital employed and financial performance of firms listed in Nairobi Security Exchange.

7d. Assess the moderating effect of CEO tenure on the relationship between innovation capital and financial performance of firms listed in Nairobi Security Exchange.

8. Determine the moderating effect of CEO tenure on the relationship between intellectual capital and financial performance of firms listed in Nairobi Security Exchange

1.5 Study Hypotheses

Based on the specific objectives, the following null-hypothesis were tested.

H_{O1}: Human capital has no significant effect on financial performance of listed firms in Nairobi Security Exchange

H_{O2}: Structural capital has no significant effect on financial performance of listed firms in Nairobi Security Exchange

H_{O3}: Capital employed has no significant effect on financial performance of listed firms in Nairobi Security Exchange

H_{O4} Innovation capital has no significant effect on financial performance of listed firms in Nairobi Security Exchange

H_{O5} Intellectual capital has no significant effect on financial performance of firms listed in Nairobi Security Exchange.

H_{O6} CEO tenure has no significant effect on financial performance of firms listed in Nairobi Security Exchange.

H_{O7a} CEO Tenure does not moderate the relationship between human capital and financial performance of listed firms in Nairobi Security Exchange.

H_{O7b} CEO Tenure does not moderate the relationship between structural capital and financial performance of listed firms in Nairobi Security Exchange.

H_{O7c} CEO Tenure does not moderate the relationship between capital employed and financial performance of listed firms in Nairobi Security Exchange.

H_{O7d} CEO Tenure does not moderate the relationship between innovation capital and financial performance of listed firms in Nairobi Security Exchange.

H_{O8} CEO Tenure does not moderate the relationship between intellectual capital and financial performance of listed firms in Nairobi Security Exchange.

1.6 Significance of the Study

This research is significant in several ways and it contributes to the literature both in terms of theory and practice. By empirically investigating the effects of intellectual capital on firm performance moderated by CEO's tenure, this thesis anticipates: - that the following individuals, groups, and institutions are set to benefit from the study findings.

The first beneficiaries of this study are the management arms of the various firms operating under Security Exchanges in Kenya that will get new insights on the impact of intellectual capital on firm financial performance. They will be able to structure and implement strategies aimed at improving their performance or hedge in an informed manner and avoid obvious drawbacks yielding maximum returns. Equally, the image of the firm will enhance better financial performance indicators and market

value in a turbulence economic environment. Knowledge gained in this study is used to increase awareness of the security exchange sector on the importance of intellectual capital, CEO's tenure on a firm's performance among key players in the Nairobi Security Exchange. The findings of this study add to the effort of government regulators in coming up with regulations that govern the operations of firms listed in Nairobi Security Exchange. The study findings are of value to the government as it brings into light various policies which are detrimental to Security Exchanges operations in Nairobi security exchange and address these factors according to the research recommendations. The regulatory agencies and other policy makers will be able to borrow from this study recommendation and identify areas that will need policy development and/or enhancement in order to improve reputation among the financial performance of firms listed in Nairobi Security Exchange.

The study is significant to investors who increasingly rely on services provided by security exchange in the region. Security portfolio analysts of various securities exchanges in emerging economies across the world will be able to appreciate the importance of the final recommendations of this study in terms of the strategies that can be taken to improve the firm's signalling using various firm performance indicators in security exchange.

The study is of great importance to the researcher in gaining both theoretical and practical experience on the impact of intellectual capital, the CEO's tenure on the Nairobi Security Exchange. To the scholars, this study provides an area for further research that can be used to add value in the present study or for the development of theory or practice. The study is also available in both printed and electronic mediums for access by other scholars. These study findings add to the already existing

literature, in that it sought to investigate the effects of IC on firm performance of the firms listed in security exchange in NSE moderated by the CEO's tenure. It also contributes to the existing literature in the provision of new additional knowledge gap to previous studies done in the more developed economies in western and Asian country's context to the developing economy context Kenya.

1.7 Scope of the Study

The study was carried out within firms listed Nairobi Security Exchanges Kenya. Today, the Security Exchanges is a major source of employment and a key player in Kenya's economy and growth. The study investigated the effect of intellectual capital on financial performance as measured by Tobin's Q moderated by CEO tenure of firms listed in the Nairobi Securities Exchange. This study used secondary data and an explanatory panel research design. The target population was all those firms listed which are 64. Data was collected for a period of 12 years from 2006 -2017. This yielded the expected observations-year data of 576. The time frame was guided by the fact that it was within this period that NSE was automated. It was during the same period that NSE experienced huge regulatory and policy enactment to the firms which had shown interest of been listed in NSE.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This section assesses the related literature; it presents theories that inform the study. The literature that includes the entire variable to be used in the model for measuring IC, CEOs characteristics and firm financial performance were reviewed, finally it presents study conceptual framework.

2.2 The Concept of Firm Financial Performance

In various areas of business, financial performance has received significant attention from academics. This is because financial performance has consequences for an organization's sustainability and eventually its eventual survival (Nassar, 2016). Heightened performance mirrors managerial productivity and efficacy in the utilization of the organization's resources, and that even leads to the significant economic success of the nation. Broadly speaking, financial performance refers to the degree to which goals and objectives are or have been accomplished (Matar & Eneizan 2018).

The impact of a company’s policies and activities can be measured through financial performance indicators. These financial methods are used to assess the financial health of the business over a given period across the same or different industries. Omondi and Muturi, (2013) note that financial performance can be evaluated by assessing an organization's efficiency. The degree to which a business earns revenue from its operating activities shows the level of productivity of the organization. Specific metrics of productivity return on equity (ROE) and return on assets (ROA). Through measuring the productivity of a business, the financial performance levels of

a product can be established. Solvency actions indicate the willingness of an establishment to pay off all its creditors by selling all its assets. It also provides statistics on the willingness of a company to continue its activities following a major financial crisis. Liquidity means that an organization is capable of delivering its assets (Lagat, 2018).

Firm performance has been a matter of investigations in various disciplines over the years. The motivation for such an associate degree of interest has been the hunt for those factors that will provide the given organizations with competitiveness and profitability. Performance rates vary across separate competitive environments and the maximum amount as across totally different industries. Monetary performance primarily reflects business performance and shows the financial eudaemonia and stability of a country over a particular span of time. It indicates that however well associate degree, the entity is utilizing its resources to maximize the shareholders' wealth and gain. An entire evaluation of a firm's financial performance takes into consideration several different forms of measures. The foremost common performance measuring employed in the sector of finance and statistical logical thinking is financial ratios (Naz, Ijaz & Naqvi, 2016).

The company's performance involves its actual production or effects as determined by its expected output (or priorities and goals). A firm's success entails three specific aspects to the production of businesses, including financial performance; brand efficiency; and investor value (Richard et. al 2009). Venkatraman and Ramanujam (1986) examined the association between corporate performance and internal productivity. They claim that financial performance is the narrowest definition of achievement. The amount of income or accomplishment is specified. Success depends

on factors that lead to the accomplishment of the relevant company's financial objectives. If several competing goals are included in the phrase institutional profitability for alternative investors. Some investigators say that scholars must also engage in financial or institutional metrics. For starters, Hoque and James (2000) assessed their performance through investment analysis (ROI), profit margin, resource usage, customer satisfaction, product, and service efficiency. Additionally, they further explored the link between the classes of performance measures in three company performance indicators (i.e., client gratification, market niche, and financial output) against those of comparable businesses within the market.

Firm performance is a multifaceted concept (Wiklund & Shepherd 2005). Past research has placed great emphasis on self-reports to gauge firm performance, and the reports have been quite useful (Wiklund 1999). Wiklund (1999) argues that performance indicators need to involve aspects of firm development and financial output. According to Tse *et al*. (2004), public data cannot be trusted since organizations are hesitant to divulge their financial information and are not obligated to reveal such data. Tse *et al* (2004) relied on idiosyncratic, self-reported data of business performance including growth and financial performance. The firm performance scale was established from past studies. It is comprised of eight points and employs a 7-point Likert-type scale. Four markers of growth were used: an increase in sales, an increase in new staff recruitment, comparative sales increase, and comparative market share. The three financial performance indicators were gross returns, return on assets (ROA), and return on investment (ROI). In addition, the study employed a measure of ‘overall performance/success’ to firm performance.

External entities usually determine an organization's capacity by examining the levels of performance (Bonn, 2000). The operations performed in the company thus reflects it's the true image. The accomplishment level usually represents its performance (Achrol and Etzel, 2003). A company's performance is aggregate returns that meet its domestic and external goals (Lin *et al*., 2008). According to Wolff & Pett (2006), a firm's performance has many names, such as growth stability, competitiveness, and rivalry, as a multifaceted concept.

Based on corporate priorities, various strategies have been taken by entirely different organizations to live up to its financial and non-monetary expectations (Bagorogoza & Waal, 2010). Nevertheless, as noted by Grant *et al.,* (1988), the majority of companies opt for financial performance measures. The most common financial or accounting metrics for companies Zahra, (2008) & Tavitiyamanet *et al.,* (2012) returns on asset (ROA), average annual occupancy rate, net profit after tax, and return on investment (ROI). Other widespread indicators of performance embrace internal efficiency, development, shareowner fulfillment, marketplace stake, and aggressiveness (Bagorogoza & Waal, 2010).

There is hardly any evidence-based scientific discourse on the best indicators of financial performance and how they can be combined so as to compare the organization's performance. The inability to integrate such factors as value, client satisfaction, and employee morale into a non-monetary and intangible process could be indicators of poor future success (Ghalayini & Noble, 1996). Additionally, the inappropriateness of traditional approaches to performance measurement necessitates the need for contemporary approaches (Ittner & Larcker, 1998, 2003; Neely, 1999). Current mechanisms for evaluating firm performance involve intangible aspects like

public image and perception, client fulfillment, staff fulfillment and attrition, skill levels, product innovation, and staff development and new value lines have been used in past work (Fullerton & Wempe, 2009; Maskell, 1991).

There is an accord between the researchers that the previous financial steps are still appropriate and important in a related complex business environment (Yip *et al.* 2009). Moreover, employee-oriented factors like employees' fulfilment and motivation have conjointly been used (Simmons, 2008; Tuzovic & Bruhn, 2005). there's a strong and complex link sandwiched between employee's morale, shopper fulfilment, and overall performance (Rhian 2002; Watkins and Woodhall, 2001). Bourne *et al*. (2000) and Neely *et al*. (1995) posit that leading and lagging measures if utilized inside a statistic format, draw corporations a rung nearer to projective performance mensuration mechanisms. to keep with the work of Venkatraman and Ramanujam (1986), this analysis incorporates each financial and non-monetary factor in conceptualizing firm performance. Literature provides a number of significant metrics that allow future financial performance to be determined. These include consumers ' pragmatic acts for example delivery of services, lead times, somaesthetic product reliability, market value among other proxies.

2.2.1 Tobin's Q Ratio as a Proxy measure of Firm Performance

Tobin's Q ratio has been extensively used as an intermediary for investment opportunities within the finance literature. Existing analysis but has not established this link. Tobin's Q ratio as planned by Tobin and Brainard (1968) has extensively been used in financial literature as a proxy for future investment opportunities and financial performance. Tobin's Q ratio has been computed as the value of a company divided by the price of the assets of the company. Although the Tobin's Q ratio, in its

many variations, is a popular choice in empirical studies, no research study has established the linkage between Tobin's Q ratio as a proxy of firm financial performance influenced by Intellectual capital components has to be done in emerging markets.

Lustgarten and Thomadakis (1987) linked Tobin's Q to structural facets of companies and discovered that the relationship relied upon the market conditions. Blose and Shieh (1997) established that there was a massive high-performance relationship between Tobin's Q -ratio and the extent of stock market reaction to capital investment announcements. Doukas (1995) used Tobin's Q ratio to test the cash that goes with the flow signaling and free cash float or overinvestment explanations of the impact on dividend announcements on stock prices. The use of Tobin's q is not limited to financial literacy.

Bhardwaj, Bhardwaj, and Konsynski (1999) used Tobin's q, to establish the link between IT investments and firm q values. Kim and Lyn (1986) used the magnitude relation to elucidate the relationship between the excess value of transnational companies and the extent of international involvement as measured by foreign sales share (Lindenberg and Ross, 1981; Lewellen and Badrinath, 1997). Chunk and Pruitt (1994) gave a less complicated formula for approximating the Tobin's Q magnitude relation and realize that their approximate Q correlates well with the additional on paper Q ratio obtained victimization the Lindenberg and Ross technique.

Megna and Klock (1993) refined the approaches to the measurement of the Q ratio and presented results for the semiconductor industry. Perfect and Wiles (1994) showed that Tobin's Q and the market value of firms divided by book value of assets

are highly correlated. While much of the discourse in the finance literature has centered on how best to measure the Q ratio, an important aspect has not received any attention. Since the methods mentioned above lead to similar estimates of the ratio, it is pertinent to question if the ratio measured using any of the methodologies is indeed a representation of firm financial performance.

Sauaia & Castro (2001) evaluated Tobin Q as a predictor of a global management game performance of a company (Keys & Wells, 1997). After 10 rounds of play, they established that high-performing corporations had high Tobin Q's. They indicated that the Q data point had prognostic validity on this basis and its significance should be tested once applied to multiple business games. If the measured Q ratio could be a valid proxy for firm financial performance, it would be expected to observe superior financial performance for corporations with a higher Q ratio. In different words, it will be expected to have a positive relationship between the determined Q ratio and the firm's financial performance.

A sample of in public traded North American nation companies was accustomed to confirm the expected linkage between the Tobin's Q quantitative relation and expected future firm performance. Following Daines (2001), the Q quantitative relation as a firm's value was divided by the cost of the firm's assets. The measure of firm performance was EBITDA scaled by sales. Obviously, within the univariate analyses, it was observed that a higher Q ratio is related to superior firm performance. The study published on the multivariate analyses to determine whether Q proportion relationship with future operating performance is influenced by the introduction of other variables known to affect future firm performance. The results were consistent

with those of the Univariate analyses and for organizations with a higher Q ratio, we find significantly superior performance.

Tobin's Q's practical use in determining a firm's financial performance-based should be guided by demand (Horvathova, 2010). In reality, Tobin's Q's aim is to work out, but the corporation is expeditiously increasing its resources. It helps to choose whether or not to make changes. This approach has also been extensively used to determine an organization's financial performance on the security market (Wang *et al*, 2014; Moon *et al*., 2014).

2.3 The Concept of Intellectual Capital

Collectively, it has been argued that intellectual capital (IC) is a key component for organizational value creation and that it brings about powerful positive organization competitiveness. Given the rapid growth of knowledge-based enterprises, much focus has been given to the significance of intellectual capital to organizational performance (Xu & Wang, 2018). IC has to be outlined and rated around the globe by researchers as a driver of firm performance (Smriti & Das, 2018). Intellectual capital is identified by the employees as a pool of inheritable knowledge and skills as they relate to the company. Sardo and Serrasqueiro, (2017) claimed that intellectual capital elements of concealed values.

Human capital is the central and vital component of intellectual capital. This reflects the value of knowledge, data, and resources received by employees of a company. It also applies to an organization that has human potential for addressing business issues and optimizing its wealth. It incorporates the non-inherited workers ' skills, information, expertise, and experience (Ahangar, 2011). The company's main trigger and thus principal asset is reported human capital. Husin and Ismail (2012) alluded to

Human Capital as "the capacity of employees to foster the continual development of information and ideas across all tangible and intangible resources." This gives consumers goods and/or services or answers to issues within a company that shares knowledge, understanding, experience, skills, and capabilities.

There has been financial capital for handling non-physical financial resources and for administrative records. Structural capital includes business theory and organizational resource management processes. Structural capital not only sets out behavior patterns and perception processes but also provides a critical framework in which information is separated and integrated into organizational knowledge. Stewart (1997) outlined Structural capital as existing data and collated expertise keep in organization memory in an exceedingly firm. Organization capital is made of explicit knowledge and reflects the casual ambiguity of organizational resources making it difficult to imitate.

Relational, comprising of customer relationships, supplier relationships, trademarks and trade names licenses, and franchises (Njuguna, 2014). Relational capital connects organizations with the external environment and obtains information regarding customer's needs and wants. Customer capital includes the external intangible assets of an organization. (Uadiale & Uwuigbe, 2011). Relational capital, defines an organization's vital, external relationships.

It is pertinent for a firm to include the worth of its intellectual capital. Intellectual capital, or a minimum of rights to that, is usually rapt for exploitation offshore, that conjointly entails risks that space is punishing to cost. an oversized enabler of company decrease may well be the transfer of access to intellectual capital to offshore subsidiaries (Bontis, 2002) in keeping with Lin, (2007), intellectual Capital integrates

intangible assets existing in an organization. Heterogeneous tools, i.e. the data, are the essential substance of intellectual capital management. Data management is the cornerstone of the governance of ICC. To raise intellectual capital, the transfer, movement, exchange, and interaction of this knowledge with the outside within the organization. Nevertheless, ICM does not only handle expertise but controls the development of data expansion (Lin, 2007).

Cohen and Kaimenakis (2007) conceptualization of IC was adopted in this study. The over definition of IC contains a few suggestions. Intellectual capital contains intangible assets that contain data that may be used by the firm to realize its objectives. it's the mix of intangible assets instead of their supreme quantity that produces esteem for the firm. this mix decides the standard of the firm's IC as examined in (Chaminade and Roberts, 2003).

The firm doesn't possess or management of these assets (Seetharaman *et al*., 2002). they're at its transfer to be used for the action of its objectives. The representatives for case "rent" their data and aptitudes obtaining their compensations reciprocally, at a lower place no circumstances will a firm hold property rights on their data (unless a contract has been marked that anticipates a previous employee to utilize the data, he/she obtained amid the amount of work). The presence of those intangible assets probably won't bring around positive comes concerning for the firm while not viable administration. Sometimes furthermore real among the case of clear resources; it is not the firm that has the foremost substantial resources the one that has the foremost wonderful money execution; however, the one that succeeds in overseeing these assets a lot of viably. The compelling administration of those assets will provide the firm with an economical competitive advantage (Nonaka, 1998).

2.3.1 Measuring and Evaluating Intellectual Capital

Bischoff et al. (2010) note there is a lack of academically funded models that examine and describe the individual's intellectual capital. To be able to measure and evaluate the intellectual capital within an organization, appropriate evaluation procedures, therefore, need to be developed, which describe and objectively analysed intellectual capital so that it can be recorded as company assets as part of the relationship capital. The value of IC can show up as the difference between the economic value (market valuations) and book value (net assets) of companies.

The suggested measurement methods for intellectual capital can be classified into four main categories. These categories are an extension of the classifications proposed by Luthy (1998). Consistent with some of the earlier studies, Sveiby (2007) provided a schematic summary of the existing methods and organized them into four main categories. The first two categories, Return on Assets and Market Capitalization Methods, are intellectual capital approaches that evaluate intellectual capital at the aggregate company level; and hereafter is called market models since the data for calculating the value can be obtained from the market and from annual reports. Except for VAIC intellectual capital measurement methods that overlap with the management models, the IC is usually measured at an aggregate level and it is not usually broken down into major classifications.

According to Sveiby (2007), the methods under this category offer some ways to calculate the value of intellectual capital or intangible assets through the difference between the firm's market capitalization and its stockholder's equity. A common characteristic of MC methods is that they all use capital market values to estimate the aggregate value of the IC. The assumption in these methods is that the capital market

will provide a useful estimate of the aggregate value of the IC. Prominent methods falling under this category such as Tobin's q, The Invisible Balance Sheet, and Market-to-Book Value ratio. None of these methods separate IC into various components.

In most of the ROA methods, researchers attempt to develop an indicator to determine the efficiency or potential value of IC. Some of the more common methods under this category including Value Added Intellectual Capital Coefficient, Calculated Intangible Value, Economic Value Added, and Knowledge Capital Earnings are discussed below. Most of the methods under this category use IC indicators that are derived from historical financial reports. The ROA indicators would allow the users in dealing with a comparative analysis among firms.

The next two categories, Direct IC and Scorecard methods, represent intellectual capital methods at the component level. The input data for these methods are usually obtained from within organizations. Most methods falling under the Direct IC category assign a dollar value to IC components, while methods classified under Scorecard do not. Compared to market models that use publicly available data, management models need data from inside the company. As argued by Sveiby (2007), DIC methods assign dollar values to intangible assets and IC by recognizing their major components. Some of the techniques under this category, determine the value of intangible as an aggregate number. In some other methods, the value or the coefficient of individual IC components can be investigated separately but the aggregate value of IC might not be determinable.

Some of the notable methods that fall into this category are chronologically discussed in the following section. These methods include Human Resource Costing and

Accounting, Citation Weighted Patents, Technology Broker, Inclusive Valuation Methodology, Total Value Creation, Intellectual Asset Valuation, The value Explorer, and Financial Method of Intangible Assets Measurement.

Scorecard methods are developed with the attempt to recognize and report individual components of intangible assets or intellectual capital in a graphical or scorecard format to enable continuous management of the value creation activities. Unlike some of the methods discussed in previous sections, the models under this category do not provide an estimate of the dollar value for different components of intellectual capital. Some of the methods under this category include Balanced Scorecard, Intangible Asset Monitor, Skandia Navigator, Holistic Accounts, IC Index, Value Creation Index, Knowledge Asset Map, Meritum Guidelines, Value Chain Scorecard, IC Rating, IC-deal, Danish Guidelines, and National Intellectual Capital Index.

2.4 Concept of Chief Executive Officer

The system of obligation and capacity for policymaking in listed firms is hierarchical. Executives in these firms work in a hierarchy with the CEO at the top. As a result, the CEO is the utmost influential individual on the board regarding financial decision making (Graham, Harvey & Puri, 2010; Wang *et al*., 2011). He/she is the one that can make the decision him/herself, or delegate it to a subordinate, who in the significant majority of cases is the CFO. If the CEO decides on leverage, he has incentives to have lower leverage than preferred by shareholders (Berger, Ofek & Yermack, 1997). Whether he delegates the decision or not depends on his abilities to use discretion as well as his influence on the board of directors. As his power increases and other directors are under his influence, the possibility of leverage delegation declines. The power of the CEO is also connected with the reduced efficiency of the board of

directors, as subordinates of the CEO are not likely to take a position on the Board to challenge them (Masulis & Mobbs, 2011). This loss provides an alternative explanation of the negative correlation between CEO power and leverage. As such, the company's capacity for credit and leverage will reduce.

Murphy and Zabojnik (2004), and Gabaix and Landier (2007) have mostly believed that managers are equipped with diverse abilities that automatically suit company performance. They depict organization managers with varied skills and knowledge. Much of past research also subscribes to this notion of CEO's multifaceted skills and its value in organization decisions and performance. On their part, Bertrand and Schoar (2003) argue that managers' factors are important. Unfortunately, most of these works define the specific managerial characteristics needed to promote organizational performance.

Some scholars have tried to define these CEO factors. For instance, Bolton *et al.* (2009) underscore CEO determination and communication skills. Determination is a kind of self-confidence that does not hinder leaders through outward attitudes and removes communication skills. This philosophy provides a compromise between adapting to new knowledge and managing staff and implies that more committed administrators overdo the strong listeners and communicators in circumstances that require more communication.

Some scholars have tried to outline these corporate executive factors. for instance, Bolton *et al.* (2009) underscore corporate executive firmness and communication skills. Firmness could be a form of self-trust that makes managers not be detracted by external attitudes and excludes communication skills. Their hypothesis represents a balance between adapting to new information and collaboration of staff, which means

that more committed administrators are over-communicators and good listeners in matters which need more communication. They aim to add to organizational success by maintaining sustainability and audacity metrics. Other researchers have given too much attention to the CEO's resoluteness. Heaton (2002) describes this leadership quality as a form of positivity that is inherently detrimental as it might lead to poor investment decisions. On the other hand, Gervais, Heaton, and Odean (2009) believe that such resoluteness can promote value by reducing unethical actions and streamlining goals.

Based on their research, Malmendier and Tate (2005, 2009) report that resolute managers effortlessly detect increased investment-cash flow changes and may easily undertake destructive investments. Further evidence that CEO conduct relates to measures of over trust, optimism, and aversion is provided by Graham *et al*., (2008) graphically suggests. Nevertheless, the resilience of the CEO and organizational performance are not conclusively demonstrated. Graham *et al*. (2008) presented extra empirical evidence that measures of trust, enthusiasm, and risk aversion are said to be dependent on corporate executive behaviors. Nonetheless, the relationship between corporate executive resolve and organizational performance does not provide conclusive evidence. Bolton *et al*. (2009) consider managers' resoluteness a type of overconfidence. However, past studies regard CEO brashness and steadfastness as well as compassion and group work competencies as the key distinguishing features of CEOs. The researchers make varying projections on the link between CEO competencies and organizational performance. They also employ distinct and indirect research indicators of the features, specifically resoluteness.

CEOs ' positive attributes typically involve reverence, acceptability of correction, communication skills, and cluster work, all of which are included in communication and social skills. It negatively masses speed, effectiveness, firmness, determination, and initiative, characteristics that mark capabilities that appear to be associated with skills in trait and execution (Bolton *et al*., 2009). The ability to speak to individuals at any point is almost constantly called because of the most significant skill of the CEO. The leadership of a CEO demands clear communication about priorities, roles, results, expectations, and feedback. Integrity and integrity are separate competencies that are extremely necessary. Besides, the Chief Leader links to staff and divisions to the highest management of the company. As such, he or she should be equipped to communicate clearly any way of contouring business goals, policy ways, and activities by transforming either side. CEOs support individual and team achievements through effective communication by making specific metrics for accommodation.

One of the most vital things a corporate executive must bear in mind is that they set the protocol for the group with their acts, not words. Moreover, effective management is the result of sensible business standards. Each personal and organizational ethical standard should be determined and enforced by the highest executives. Self-seeking executives are destroying the company's cooperative spirit. Leadership implies setting standards of competence that are subscribed to by everyone within the organization. The leader walks the speech in different words and gains trust in the process (Ahmed (2007).

The company's management owns a family interest. A money reserve is used to cover the company's short debt. Long-term debt allocations have a positive and negative

impact on the Director's total expected benefits of long-term liabilities. On the positive side, the Governor would move the proceeds of existing debts to a null date by receiving large deposits of the debt interest charged on the company's income. Nevertheless, the collection of longer debts would raise the company's projected default rates and the manager's personal bankruptcy costs, which hurt their price longevity (Ahmed 2007).

The corporate manager has an ownership stake and a capital payout is made via a cash reserve to cover the short liability of the company. The longer maturity alternative represents the positive and negative effect of semi-permanent debt management on the average potential gain. As a positive aspect, management will raise the current financial earnings at the zero date by shielding debt interest rates from corporate taxes and by raising the debt to accommodate their initial payout. Nevertheless, the choice of longer debt will increase the business and personal manager's projected default costs, which negatively have an impression on her continuation value (Ahmed 2007).

Increasing the CEO's skills enhances the CEO's performance and anticipated rewards for each contract period. On the side, the leader then places more emphasis on his longevity than on his initial return in selecting the long-term loan of the firm. Since this debt decreases the continued interest of the leader by the insolvency potential the leader chooses lower long-term liabilities, to reduce the insolvency chances (Ahmed (2007).

A rise in the manager’s willingness to make uncertain decisions raises the expenses invested in incentives to the manager so that he puts less energy in equilibrium. The results he obtains in every stage and the desired reward decrease. As such, the manager places greater emphasis on the company's first payment compared with its

continuing value. The CEO takes advantage of the positive results of the ex-post debt tax shields on external financing excess and thus its first payoff (Myers, 2001).

In his analysis Ahmed (2007) suggests that their hypothesis is unexpected, owing to its negative impact on long-term debt of the capacity of the CEO and the positive effect of risk aversion. Casual intuition may likely imply that the business manager needs to positively impact long-term debt since it raises the company's income in every stage. On the other hand, a propensity to take risks can hurt long-term loans as earnings are decreased by risk-sharing expenses, and the impact unfavorable of the possible insolvency on the intended benefit rises by the lender.

Ahmed (2007) indicates in its review that the chief operating officer's negative impact and therefore the positive effects of averting risk were unexpectedly expected. Incidental intuition will tend to suggest a total debt impact for a company owner since it reduces the company's financial benefit at all levels. Nevertheless, the risk market may hurt long loans because financial benefits decline as a result of risk-sharing ratios and therefore the adverse effect on the Manager's ideal price will increase as a result of the possible financial condition.

2.5 Theoretical Perspective

This study is informed by several theories including agency theory, resource-based view theory, and the dynamic capabilities theory. These theories are expounded further in the subsequent sub-section.

2.5.1. Agency Theory

Agency theory derived from economic theory. Alchian & Demsetz first introduced it (1972) and expanded it further through Jensen and Meckling (1976). The key agent's

role is established by Agency philosophy, while investors are the faces, while the manager is the person who is hired to run the company on behalf of the principal (Clarke, 2004).

This theory separates ownership and control of firms. The shareholders are the directors inside the companies, whereas the managers are the agents and the company's board always play a dominant role by taking care of the investor's expectations (Jensen & Meckling, 1976). A pure agency relationship could be the connection between the stakeholders, the owners of the company, and the chief executive. According to the theory of the Agency, managers (CEOs) have additional company data due to operational management over the company compared to the owners of the company.

Accordingly, at the expense of shareholders (owners) wealth, managers could act expeditiously and look for personal rents. The subsequent loss to the wealth of shareholders is called the price of the agency. This theory assumes the individualistic, opportunistic, and greed of managers (Davis, Schoorman, and Donaldonson, 1997). Based on these assumptions, the idea informed the organization to put less governance in the hands of managers of the Organization. The investors are guaranteed, in conjunction with Jensen and Mackling (1976), that the best judgments can be generated by the managers provided that appropriate opportunities are given and only if the agent is monitored. Besides, the Agency's theory assumes that supervisors and subordinates are divergent and are mainly greedy and selfish.

Schmidt and Posner (1983) state that longevity is completely related to tenure as long as it gives rise to a strong dedication to company values. Besides, by demonstrating the tenure mechanism influencing firm performance, Simsek (2007) asserted that

long-tenured CEOs have positive impacts on a firm's financial performance. This tenure influences firm's financial performance notwithstanding its ability of the CEO to cope with risk-taking activities. Conversely, an additional come occasionally comes with risk, and long-tenured CEOs can establish an improved trade-off that maximizes risk-taking returns as short-tenured CEOs do.

Agency theory links to this study through the concept of intellectual capital management. When managers (CEOs) are managing IC, the most critical resources of the firm, they increase the shareholder's wealth. Proper management of such resources will reduce information asymmetry because it will provide shareholders with more information that is not provided in the financial reports. Moreover, when firms link incentives with performance, agents (managers) will become more productive and that will lead to better firm performance and accordingly will result in more shareholder wealth. Agency theory implies that if managers do not carry out their responsibilities toward the effective management of intellectual capital, firm performance will suffer.

2.5.2. The Resource-Based View Theory (RBV)

The Resource-based (RB) theory is considered the pioneer that focused on the importance of intangible assets for firms (Barney, 1991). In this philosophy, the underlying premise is that both measurable and intangible assets are the competitive advantage of the commercial company. The intangible assets in this concept must be distinctive, inimitable, and can create a competitive edge that is sustainable for the company. It assumes that the performance of tangible properties relies on immaterial asset quality and vice versa.

A company's financial wealth has long been known as real and intangible assets. The theory has been mainly directed at immaterial capital over time (Reed *et al*., 2006). These authors argue that intangible assets or IC equities actually contribute to healthy firms ' competitive advantage. It says that every business can trade and replace natural resources such as shops, installations, and financial assets at any time. Youndt *et al*. (2000) reaffirmed that it is only IC that contributes greatly to income development and therefore provides a strategic advantage to knowledge economy firms. This argument was further reinforced. Including the theory of Kolachi and Shah (2013) along with the atomic number 37 hypothesis, which notes that IC is central to every young and established business in more developed countries, this theory helps explain the connection of IC with the success of an entity. They primarily claim based on this principle that IC contributes significantly to a company's financial output, notwithstanding the position of an entity, i.e. both developed, that, and borders markets. This is following the World Health Organization's statement of Zéghal and Maaloul (2010) who note that companies will generate additional income and utilize their strategic resources for instance the IC.

When assessing a competitive advantage of a company, the principle of RBV considers four (4) important features: longevity, consistency, transferability, and replicability. The theory takes the view that companies are heterogeneous in terms of resources, capabilities, or funds. Some of these resources are not readily tradable - for example tacit know-how and reputation (Teece, 2007). Therefore, from the RBV perspective, firms possess not only heterogeneous resources but also sticky resource bundles. The resource heterogeneity results from their immobility and no tradability in the factor markets making them difficult to accumulate and imitate.

The RBV theory leaves out the process of resource development and adaptation to the external environment. This is that dynamic capabilities bridge. They alter the resource base on the changing environment (Zahra & George, 2002) and therefore are more valuable in unstable environments. They may create market change as opposed to just responding to it (Eisenhardt & Martin 2000). The proponent for resource-based philosophy is Penrose (1959). In this theory, the sustainability of the company's performance and competitiveness is dependent upon the resources and capabilities at its disposal (Wernerfelt, 1984; Peteraf, 1993). Mahoney, (1995) posits that if companies are to develop, they must collect, marshal, and effectively use their assets strategically. This implies that performance is a matter of strategizing. Companies can enhance their performance by strategically differentiating their products and services (Collins & Porras, 2000).

The theory supports the structural capital efficiency objective of the study since the structural capital encompasses the resources needed for innovation. As stated in the theory the performance of listed firms is influenced by the resources available and how well these resources are utilized inside the organization. Structural capital such as databases, organizational charts, process manuals, techniques, and schedules will require assets to be created and maintained. Subsequently, listed firms endowed with assets will be more likely to gain a competitive advantage.

2.5.3. Dynamic Capabilities Theory

The Theory of flexible potential is an extension of Penrose's capital-based view (RBV) (1959). Flexible capacities and RBV combine expectations, but the former may help us understand the transformation of a company's resource inventory for firm performance over time. The dynamic capability approach means that production

companies need individuals who demonstrate prompt, quick, and flexible development in the management skills, so that internal and external competencies are easily organized and implemented (Teece *et al*, 1997). Intrinsically, a particular capacity to differentiate and hard to replicate should be strategically enhanced to a client (Teece *et al*., 1997). Like RBV, which uses heterogeneous, irreproducible tools, DCV notes that the nature of expertise and capacities is in the architecture and social control mechanisms that are created by a company's assets and formed by its methods.

Given RBV's ability to describe, however, an organization can use its intangible capital to devise and execute a valuable strategy that provides efficiency, however, the approach lapsed at intervals rationalization on and why certain businesses outstrip others in rapidly dynamic environments (Carlos, 2011). As a consequence, Dynamic Capabilities Read (DCV) emerged as a coordinating framework for completing and complementing the RBV when deciding to provide superior firm output in such unannounced and increasingly dynamic sceneries (Teece and Pisano, 1994).

Resources are tangible and intangible assets, generally outlined, that the firm will develop and effectively manage. Resources, that embrace the abilities of the firm's staff, its instrumentality, and also the collective skills of the organization, generate streams of services that the firm will deploy.

Schumpeter's work in 1934 contributed to the concept of dynamic capabilities (Camison and Monfort-Mir, 2012; Chinese Monetary Unit *et al*., 2013). The Schumpeterian view hypothesized that what affects performance is the activities and skills that compose a company's basic structure as well as the organic mechanism that interacts between the world and a company (Makkonen *et al*., 2014). The study also

showed that a new blend of skills and capital into prevailing operational capacities forms the basis for evolutionary mobility (Jiao *et al*., 2013; Makkonen *et al*., 2014).

The dynamic expertise approach suggests thriving organizations that provide a swift, scalable response, and leadership resources to organize and deliver internal and external skills efficiently (Teece *et al*., 1997). Therefore, a selected ability to respond strategically to the requirements of a client should be improved, distinctive, and difficult to duplicate (Teece *et al*., 1997). DCV maintains that the crux of talents and capacities does not change in the structural and social control structures that are generated by and carried out by the asset roles in a business, unlike RBV, which has been based on heterogeneous and reproductive capital.

Intellectual capital is an intangible resource that is difficult to measure. However, it is critical to achieving organizational value added (Mačerinskienė and Survilaitė 2011). In this sense, dynamic capabilities support the organizational effort to develop new products and processes in the intended time (Wu 2006). Consequently, organisational inability to change its resources base would undermine its effort to create new products (Danneels 2011). Empirical evidence shows that dynamic capabilities influence innovation in public listed companies, in any securities exchange.

In today's business climate, defined by fast changes in economic and political systems in phenomena like financial processes and e-business hyper-competition, rapid technological advances, companies can build and model-specific strategies that can produce resources, expertise, and competitive advantage over a lasting period (Marr *et al*. 2004). Tseng and Lee (2014) concluded that it is an indispensable need because of the incapacity of the existing Standard Strategic Management Framework to tackle differences in the reliability and use of its information tools to obtain a human

adaptive potential that can react quickly to changes in its settings. The foundation for sustainable business success therefore lies in businesses ' agile abilities to develop internal and external capital and expertise to fit evolving conditions quickly (Zahra & George, 2002).

Resources, that embrace the abilities of the firm's staff, its instrumentation, and also the collective skills of the organization, generate streams of services that the firm will deploy. At a certain critical juncture, the agility of a corporate executive and also the high management team to identify a key development or pattern, then delineate a response and lead the company forward, could be the most outstanding feature of the diverse capabilities of the company. The approach to dynamic capabilities helps to justify why intangible assets, together with the collective data and capabilities of a firm, have always been the most valuable asset category in a variety of industries. Accordingly, the rationale for this study is to develop a conceptual model and provide evidence in the emerging market literature on dynamic capabilities as a product of intellectual capital relationship in predicting firm financial performance in listed firms in Nairobi Security Exchange.

2.6 Effect of Human Capital on Firm Financial Performance

The concept of human capital comprises the know-how, hands-on capabilities, and talents (KSAs) of employees (Deloitte, 2014). It involves both accurate how-to skills that can be turned explicit and the tacit KSAs which are never easy to articulate. It is common knowledge that human capital, specifically employees' schooling and development, is pivotal to any business firm. These features are a factor in compensation decisions for employees and managers (Combs, Liu, Hall & Ketchen, 2006). Wholesomely, KSAs, namely the familiarities, schooling, and development

that leaders come into office with, are important shapers of strategy and market performance.

Human capital refers to the company's capabilities and uses efficiencies that draw from the members' training, talents, and cognitive abilities (Diez, Ochoa, Prieto & Santidrian, 2010). Indeed, most contemporary firms strive to outdo others in the market by investing in the growth of the best human capital. The problem of administrative capability and leadership growth is one that has been discussed in Africa in general (African Human Capital and Labor Survey, 2014; Deloitte, 2014). In contrast to the leadership ability challenge, observers also argue the most critical issue is the reduced worker output and limitations in meeting client needs in South Africa (Warnich, Carrell, Elbert & Hatfield, 2015). Remarkably, from a wider perspective, Warnich *et al.* (2015) believe that although the country registers among the least productive worker output globally, South Africa has seen a rise in wages. Hence, the suggestion that HC advantage is a determinant of competitiveness.

The role of human capital in the understanding of the relative performance of similar companies has been stressed recently by researchers working on resource-based competition (RBT). (Segal *et al.* (2009). RBT attributes this disparity to the heterogeneous allocation between businesses, including human capital, of valuable resources. Organizations having valuable resources other than rivals with these resources can not readily reproduce or replace. With attempts to identify the types of tools that most likely influence competition and success, the scholar quickly pointed out HC's expertise as being the most probably useful and imperfectly imitable asset.

In research, Segal *et al.* (2009) positively relate investment in HC with monetary earnings. The researchers see academic qualification and business leadership

experience as promoters of better monetary outcomes. Similarly, HC control and deployment for companies are linked by Bontis and Fitzenz (2002) with better financial results. The effects of human capital on intellectual capital resources are improved per employee's financial performance. Their educational credential as well as the inspiration for their research dictates further education for HC investing in HC as such.

Moreover, Seleim, Ashour, and Bontis (2007) have examined how HC and firm performance impact one another in software companies. They established a positive link between HC measures and firm output. Measures like training attended and team-work activities seemed to create model employees whose increased output helped to promote the general performance of their organizations. Dooley (2000) confirmed this and showed that the design quality and market share size had a significant positive association.

Josan (2013) examined value analysis with the purpose of exploring the connection between human capital and organizational performance. The productivity, innovation, and service quality of the organization are defined by its relative performance. Skills and human capital resources are part of profitability. HC development involves investment in employee training, welfare, and training. According to Jason (2013), globalization has led to the development of an information-based economy, in which human capital factors – academic qualification and preparation – matter a lot. In contrast to the performance of the company, investment in human capital is measured according to current literature–learning increases productivity by 16%; income also improves. Their performance is directly proportional. The rise in workers results in improved performance and resulting in improvements in bonuses.

The effect of HC's development on economic progress in Pakistan was measured in a report by Amin *et al*. (2012). The research collected information on the current annual reports from the Pakistan Economic Survey, Pakistan State Bank, and Labor Organization 2000 to 2010. From the findings, Amin *et al*. concluded that enrolment levels in primary, colleges, and universities and increased life expectancy contributed to economic development. They also found that increase in high school enrolment was detrimental to economic development.

The effect of IC on the output of banks was analyzed by Cabrita and Vaz (2005). They also found that the quality of human capital is substantially related to banking, in which IC is a key to assessing banks ' efficiencies in value generation. Goh (2005) reports that 80% effectiveness in VAIC™ performance is a result of HCE. This implies that, unlike SCE and CEE, HCE is a greater indicator of VAIC™ performance. Joshi, Cahill, and Sidhu (2010) have reported similar results, noting that VAIC™ positively and substantially associates with HC subsequently promoting value in the Australian banking sector.

The essence of the relations between employee performance and its socio-economic features is contrasting, according to Saeedi *et al*. (2012), in important and beneficial terms of employee productivity. The analysis also showed that the performance of employees is increased by human capital. In addition, human assets perform better when they feel more competent in their work, are consulted, encouraged to contribute to decisions, and given offices or tasks that fit their skills.

The precursors and impacts of human capital in the financial sector in Canada were examined by Bontis and Serenko (2009). 396 credit union workers were issued a closed questionnaire. Data were analyzed through factor analysis and independent

sample analyses. Knowledge processing, particularly information sharing and effective training, has been found to be most critical for corporate growth.

The effect of human capital on the quality of software companies in Egypt was analyzed by (Salim *et al.*, 2004). They examined 38 firms of which only 16 took part in the study. They found that firm performance was a factor of employee competence, innovativeness, determination, and reliability. Human capital has received greater attention presently because of changing trends in information transfer and economic development. Marimuthu *et al.* (2009) argue that every country is shifting attention to human capital and more resources are increasingly allotted to its growth. They also aver that human capital contributes positively to monetary and non-monetary improvements of firms.

2.7 Effect of Structural Capital on Firm Financial Performance

Structural capital (SC) is the second essential part of IC. It comprises all the intangibles that are direct and indirect and help in the overall operations of a business (Youndt, 2000). It includes regulations, traditions, day-to-day operations, and company culture all of which promote structural performance and growth (Youndt, 2000). IC also applies to create systems that allow resources to operate properly, software, databases, patents, and copyrights, and supportable infrastructure process. SC defines the operational procedures of a firm, the technical, and strategic activities in order to facilitate for value creation effectiveness of the company (Carroll & Tansey, 2000).

The capital structure typically consists of debt and equity for a firm, whether, for a big corporation their structure extended to other components such as preferred share and

retained earnings. The firm's internal finance is equity, on the other hand, external finance is debt and the majority of firms use the combination of debt and equity (Nassar, 2016).

Structural capital (SC) or Organization Capital is the established information base owned by a firm collected in its websites or libraries and documents, etc. (Youndt, 2000; Edvinson & Malone, 1997). The concept of 'structural capital' is favored by Youndt since, as he explains, the concept accurately points to the real information base owned by a business. To Youndt (2000), the information base of a company is a critical factor in its excellence in performance. Structures like legal structure, corporate governance, ideology, authority's leadership, information system, and engineering, research, and development, etc. may shape what is called institutional capitals. The view or viewpoint of Edvison*et al* (2004) can be seen objectively as of the highest importance. Although the two are synonymous, structural capital may serve as a well-managed source of competition.

The correlation between systemic assets and market success has been investigated by Saeedi and Mahmoodi (2011). They found that the indicators of competitiveness improved business capital. Moreover, although ROA contributes positively to overall business wealth, ROE does not seem to have any impact on firm capital. Ranjbar (2012) has studied the performance-based influence through institutional structures, information systems, corporate culture, internal organization, or operational frameworks of business capital on the Department of Economy and Finance of Tehran province. The results of the research showed that systems have a direct connection to the performance of the company. Quality will be strengthened in terms of institutional capital and psychological dimensions.

Abolhassani *et al* (2012) explored the effect of structural capital on the company's performance. His study established that the debt ratio substantially reduces a company's financial indicators of success. One limitation of Mofaredi's research is that it fails to factor in other business decisions, specifically the moderating impact of internal cash flow provided. Mwangi (2010) studied the effect of private capital on the performance of Nairobi-coded firms. His partnership was extremely significant with capital and ROE, sustainability, and ROI. In the 32 Iraqi automobile and textile industries, Ahmad (2012) has analyzed the impacts of systemic capital on company performance. The results show that private investment increases productivity considerably. Product spending, on the other hand, has hardly any impact on productivity.

Ebaid (2009) has studied the impact on the performance of Egyptian firms. The study reveals a lack of impact on the company's capital base. These findings contradict Hadlock and James (2002) and Ghosh *et al*. (2000) which found that the distribution of business assets was positively influenced by financial investments. Adekunle (2009) also found that the leverage rate is adverse to business performance in studies into the effect of private capital on the performance of businesses. In the report, however, other financing factors, including the mediating impact of internal cash flow, were not considered in the review. Zeitun and Tian (2007) found that the company's income negatively impacts its output in a survey of 167 companies in Jordan, between 1989 and 2003, according to accounting and business metrics. Similar findings are also reported by Rao and Syed (2007). They argue that liquidity, duration of the operation, and capital power substantially affect performance.

In another study, Berger and Bonaccorsi (2006) explored the economic strength and market reach of the erstwhile public but now private businesses in Egypt. He sought to ascertain whether or not their performance varies between companies based on their financial muscle. The study covered 69 companies and showed that the type of structural capital influences company performance. The effect on the output of businesses by institutional capital was analyzed by Berger and Bonaccorsi (2006). Between 1995 and 2005, the work was carried out by 210 firms. Findings suggest that after managing firm-specific features like organizational size, non-duality, debt, and production, systemic capital has had a significant effect on profitability. The dual correlation of institutional capital and quality was discussed, by Berger and Bonaccorsi di Patti (2006), with an emphasis on certain American banks. Their findings were in line with the agency cost theory's view that higher leverage contributes to increased market performance. Among SMEs in New Zealand, Margaritis and Psillaki (2007) have also found results that support the position of the agency cost theory.

2.8 Effect of Capital Employed on Firm financial Performance

The money employed corresponds to the amount of all wealth and resources obtained by a corporation. This includes the commitment of investment capital of investors attached to long-term bonds and loans from the financial perspective. This requires fixed assets added to operating capital from an investment viewpoint. The value of the assets that make up the capacity of one company to generate revenue therefore reflects the employed capital. This capital is customarily funded using shareholder's equity and net debts. It comprises all the wealth that is at the direct disposal of the CEO and usually involves accounts receivable, stock as well as the infrastructure and

facilities (Nik Maheran, 2009). Studies on intellectual capital in the banking sector show that the banking business depends heavily on human capital (Saengchan, 2008; Cabrita & Bontis, 2008). Moreover, Riahi-Belkaoui (2003) found a positive correlation in American transnational corporations ' human property and financial efficiency. The Capital Employed (CE) ratio measures the company's primary sector profits to the company's capital investment. It is a credible organizational quality metric (McClure, 2010). CE efficiency entails the effectiveness that SCE and HCE do not incorporate. According to Pulic (1998), IC never generates value alone; it has to be used along with capital (facilities and monetary) employed (CE).

2.9 Innovative capital and financial Firm Performance

The modern world compels businesses to look for new ways of gaining competitiveness. In the industrial era competitiveness was maintained due to more effective use of separate factors of production, in the post-industrial economy the key weight is being put on the creation and systematic development of the environment promoting generation and the implementation of innovations, focused on development, production and product/service support (Grigorieva, Yelenevab, Golovenchenkoc, & Andreevd, 2014)

This highlights the uniqueness of the new product (goods or services), the new production process, the new marketplace, channel of delivery, or different organizational structures. There is also a high impact on innovation. Another aspect of company competitiveness is the Venture Hub, a major driver of business that has long been regarded as economic growth (OECD 2005).

Innovation is related to acquisitions and applications of expertise that can be turned into new financially profitable assets (McCann & Ortega-Argilés 2013). Therrien *et al*. (2011) defined innovation as an intricate procedure linked to the improvements of the manufacturing processes alongside techniques, as being connected closely to the innovative ideas (i.e. stocks of (technical) knowledge), and to human capital. This includes businesses seeking to gain distinctive technical skills and build on them. Company-level creativity refers to a transparent and inclined company to embrace new innovations that lead to the growth and unveiling of novel merchandise (Rubera and Kirca 2012).

Innovation and distinction are considered necessary for every company due to fierce competition in the industry, globalization, and an acceleration in innovation in recent years. Businesses must use new possibilities to develop new goods and/or services and industries to reach market success and maintain a competitive edge (Tajeddini 2010). Innovation is described as' the implementation of new useful ideas.' The general term applies to different types of design, such as product development, the implementation of new engineering systems, and management. This means the adoption of new technologies and/or procedures, based on customer preferences (Kalkan, Bozkurt, Arman, 2014), to increase productivity and overall profitability. The competitive edge has moved from conventional to digital capital in the modern corporate world. The globalization process and that development in fields such as industrial engineering, IT, and telecommunications have led to the situation (Osinski *et al*. 2017). This situation has emerged. Innovation has long been considered necessary to improve added value, to promote the development of businesses along the value chain, to increase productivity and efficiency, to stimulate spillover effects of innovation and economic growth in general (Trajkovski, 2018).

Technology also represents a major cornerstone of intangible human resources (OECD, 2012), with up to one-third of the growth in production in the field (Van Ark *et al*., 2012). Innovation often represents today. Empirical research indicates that creative capital and business skills generally constitute roughly 80% or more of all technical capital in appreciation of their role in global economic growth and in the development of the firms (Corrado *et al*., 2009; van Ark *et al*., 2012).

The company's ability to innovate is the main factor in terms of profitability. Capabilities of change drive companies to continually create solutions to adapt to changing market demands (Slater, Hult & Olson, 2010). Innovative research argues that creativity is the main source of business success and sustainability in such an analytical and dynamic competitive environment. Empirical studies by various scientists have shown that ingenuity is a necessary element for firm success (Gunday et al.,2011; Kiriyama, 2012).

Four forms of technologies are introduced in the OECD Oslo Manual (2005). These are creative goods, systems, organizations, and markets. Product and process development, especially in the service industry, are closely related to technological improvements. Service technology can also be described in the Oslo manual (2005) (Rothkopf & Wald, 2011). Item, system demand, and structure contribute to change in Financial Institutions (Deloitte, 2012, 2017; Schaerer & Wanner, 2011).

Innovation would have a more dynamic and separate impact on business quality in service companies than in development (Lin, 2011). This is because it's invisible, disruptive, inseparable, and unpredictable. In the past few decades, scientists have been committed to finding the connection between technology and market achievement. To order to evaluate business performance, analysts have used various

kinds of financial and non-financial metrics. Innovation had a positive effect on business performance, proposed (Yıldìz *et al*. 2014).

Based on existing literature (Çakar and Ertürk 2010; Liao *et al*. 2010 and Lin 2007), it can be conceptualized that Innovation Capital has the potential of knowledge creation and accumulation to institutionalize something new in an organization, and evaluate it from the aspects of a product, process, and management. Product innovation means providing differentiated or new products/services in the market and obtaining satisfaction from customers. Process innovation concerns providing new manufacturing or service operations other than current ones to achieve better performance. Innovation Capital has been regarded as the sum total of knowledge resources of a firm. Innovation Capital and its components were demonstrated to contribute to a firm's competitiveness, innovativeness, financial, and non-financial performance (Phusavat *et al*. 2011; Sharabati *et al*. 2010; Shih *et al*. 2010; Hsu and Fang 2009; Kang and Snell 2009; Kong and Thomson 2009; Longo et. al 2009). Innovation is not a new phenomenon, as stated by Fagerberg (2004). Nevertheless, despite its significance, scholars have not given it due attention. Marques et al. (2011) emphasized that fostering competition among businesses would lead to better business and financial performance for firms. The complex role that business activity plays in fostering innovation and technology, economic growth, and jobs is shown by empirical evidence (Audretsch *et al*., 2006; Van Stel, 2006).

Mairesse and Mohnen (2010), Hall (1990), and Mairesse and Mohnen (2010) have synthesized work into the relationship between creativity and competitiveness or organization quality. Mairesse and Mohnen (2010) examined the features of technology surveys and the economic issues resulting from such collected data. Hall's

(2011) study focused on the synthesis of company-level research on the relation between technology and productivity.

Beneki *et al*. (2012) undertook to study the correlation between technology and company accomplishment and found that the private sector did not want to invest in research and development. Thus, they suggest leveraging private investment in innovation through public investment.

Change literature shows the need for change to succeed, prosper, and gain a competitive advantage (Standing & Kiniti, 2011). Murphy, Trailer, and Hill (1996) argued that organizational success was a cross-cutting phenomenon. Varis and Littunen, (2010) concluded that enhancing company quality and profitability is the ultimate reason for firms to participate in technology practices. The Oslo Manual (OECD & Eurostat, 2005) also highlights the effect of technology practices on the company's performance. This research focuses on a constructive link between technology and financial performance in supporting sectors, beginning from every theoretical basis above.

2.10 Intellectual Capital and Firm Financial Performance.

Resource-based and adaptive power concepts accept that intangible resources are the main source of competitive advantage and change inefficiency. Several authors have established the IC classification by its various components (Kamath 2007). Including private, systemic, and consumer resources, the IC is first divided by Sveiby (1997). The consumer capital was later replaced by Bontis (1998) for moral capital. The IC was divided into four different components in another study: individual, consumer, creativity, and processes (Wang and Chang 2005).

Good intellectual resource management will increase the value of the business client. If it is possible to make optimum use of the three intellectual resources: money, human capital, and institutional capital, a superior intellectual capital will be created in the business. ICC will ensure the companies excels fulfill the needs of all shareholders, including lenders. Capital market investors will recognize the strength of the Company's intellectual capital with a rising stock demand for these companies and will drive the increase in valuation in the Company.

Earlier IC (HC and SC) cannot create value for the company independently, so it must be combined with other intellectual capital owned and used by the company (physical and financial, (CE) and innovation capital (INCE). The current research seeks to expand the efforts done by other researchers to find a suitable measure for IC efficiency and its effect on the market, economic and financial performance by using Value Added Intellectual Capital (VAIC). Various scholars have argued on the idea that intellectual capital enhances firm performance. Knowledge resources and intellectual resources are the foundation of competitive advantage.

Past research has proven that IC positive effect on financial performance as measured by the profitability of the firm: return on assets, and return on equity, earnings per share (Afroze 2011). This is also confirmed by the results of the research of Poraghajan (2013) using firm data in the Tehran stock market. The study established that all intellectual capital variables are positively correlated with ROA. Deep (2014) research results showed that the only value-added capital employed (VACA) that significantly affect the profitability of the firm.

VAIC has been used for the calculation of IC quality in various countries by several previous and current studies (Mavridis and Kyrmizoglou 2005; Pulic 2000; Kamath

2007; Joshi *et al*., 2010; Mavridis 2004; Goh 2005) and has also been used for many years. The VAIC and the ROA of Islamic Financials Institutions (IFIs) find their positive relationship in 21 countries in Nawaz and Haniffa (2017). The positive correlation between VAIC and the competitiveness of GCC-region banks has been established by Al-Musali and Ismail (2016). However, the VAIC and ROA relationships of Turkish banks were not identified by Ozkan *et al*. (2016), and the VAIC and the ROA relationship of Turkish banks also were not found by Singh *et al*. (2016).

Previous IC studies, however, produced mixed results. Vishnu and Kumar Gupta (2014) documented a significant positive relationship in emerging markets between IC efficiency and firm performance, whereas Firer and Williams (2003) revealed no relationship. Tan *et al*. (2007) also identified a significant positive relationship between IC and firm performance in developed markets. The results of the current study also support the work of Xu and Wang (2018) whose findings on intellectual capital, financial performance, and company sustainable growth found that SC was the least advanced component of IC evidence from the Korean manufacturing industry. The findings of Smriti and Das (2018) are consistent with the present study findings. Their results showed that businesses in Korea lack management skills and tend to rely heavily on informal processes of leadership, which caused internal management system deficiencies. Scholars who have studied how IC was linked to corporate financial performance have also identified similar findings.

Firer and Williams (2003) demonstrated that firms' performance had a positive relationship with the IC components and South African companies. Tan *et al*. (2007) hypothesized that IC would significantly boost organizations ' current and future

results, based on data from listed companies in Singapore. The findings of Nimtrakoon (2015) for ASEAN countries were also reliable and valid. Sardo and Serrasqueiro (2017) recently argued that IC should be used by companies to boost a product's financial performance and market value.

Su and Wells (2015) and Joshi *et al*. (2013) find no conclusive results in the Australian developed economy. Similar results are documented for the under-developed markets as found out by Firer and Williams (2003) of no relationship. These mixed results can be attributed to at least three reasons. First, there is no study in the literature that includes different types of markets (developed, emerging, and frontier) to look at the bigger picture. Second, the existing published studies on IC rely on static measures such as OLS or FE to estimate the relationship between IC and firm performance. In other words, previous studies ignore the dynamic relationship between IC and firm performance. Third, most studies use the original version of the VAIC model, which suffers from criticism of its construction. One of the limitations of the VAIC model is that it does not work for companies with negative value-added or losses (Firer & Williams, 2003). Pulic (1998) argues that since firms with negative income do not add any value, their IC efficiencies cannot be calculated.

The multifaceted association between intellectual capital and market success in the BRICS economy, analyzed by Nadeem *et al* (2017), was found to be strongly correlated with the productivity of intellectual capital with ROA and ROE. Moreover, the positive value and significant impact on company performance are that of human, structural, and physical capital. The theory of reliance on wealth and philosophy of

education highlights the importance of the organizational success of intellectual capital.

2.11 Chief Executive Officer tenure and firm financial performance

Longer CEO tenure will result in corporate performance gains, only if positive employee relations are attained (Wang *et al*., 2009). The degree to how CEO tenure influences company-employee affairs will somewhat reflect the performance impact of CEO tenure.

Based on current research, it is expected that right from when they come into the office, managers are averse to exaggerate their company's performance. Gibbons and Murphy (1992) concluded that a long tenure with a company helps the CEO build their reputation. They argued that at the outset of its career, the market was not aware of the potential of a CEO. CEOs never leave a business to a different company. We have no previous records of their job as CEO at the outset of their tenures. In fact, a CEO can't move human capital from one company to the next. As a result, the CEO's role has to be separated from other quality determinants and the potential of the newly appointed CEO is likely to remain unknown.

Fama (1980) and Hambrick and Fukutomi (1991) suggest that with current and past results the business assesses manager's skills in terms of tenure. There are also likely to be strong incentives for short-term CEOs to disclose good performance. Similarly, if in the current period short-term, earnings-based CEOs are actively considered to be hostile journalists, they are inexperienced at the outset of the blog. The duration in the office is a vital feature of a business leader as it marks a unique duration of strategizing, ideals, goals, and ultimate decision (Wiersema & Bantel, 1992).

Hambrick and Fukutomi (1991) hold the view that managers who stay in office for too long create a paradigm, become less flexible, inclusivity, and focus on specific projects. However, they raise their understanding of business projects and influence. The long term of the top management group has been suggested that they are reluctant to change their corporate strategy because they know the company policy and procedures. The long average group tenure is reducing the communications rate, according to Wiersema and Bantel (1992), because Members are prone to expect the views of others. In contrast, the long-term community can be segregated from existing information sources.

Accounting research shows a link between the CEO's term of office and the differentiation of financial policy-making. Managers are more averse to exaggerate income during the commencement of their tenure (Ali & Zhang, 2012). In the early years of service as CEO (Hermalin & Weisbach 2012), demand analysis is according to those authors more relevant. Bedard *et al*. (2004) and Liu and Sun (2010) find that the members of the Committee are negatively related to the administration of the revenues as long-term directors hold deep experience and knowledge of the activities that result in effective control positions.

Managers' term of office can be both useful and detrimental to the company's performance, given the manager's life cycle seasons (Millerand & Shamsie, 2001). According to the Leader Life Cycle Theory, as propounded by Hambrick and Fukutomi (1991), managers' term of office has an inverted curvilinear link with corporate financial performance. Dikolli *et al.* (2011) believe that the executive's compensation has a role to play in the relationship between his term of office and

financial performance. To them, financial earnings are a major standard by which investors gauge the manager's performance.

The length of the office term of a manager is directly reliant on financial output, and a longer-term may imply increases in earnings for the company. The features of management and the executive's term of office are endogenous and poor management implies a longer term of office (Dikolli *et al*., 2011). Herly and Sisnuhadi (2011) advocated that the longevity of the board is the key feature of business performance. Longer membership will lead to greater board expertise and know-how (Roselina, 2009). In fact, a leadership manager's length is linked to performance and power in management (Roselina, 2009). During previous research, the power of the directors was equated with the period of the committee (Ozkan, 2011; Roselina, 2009; Bhagat & Bolton, 2008).

Also, Bhagat & Bolton (2008) has carried out an analysis of 136 companies (not including finance companies) listed in Kuwaii for the financial year 2009. The study found that the Board's tenure adversely affected companies' performance. The result showed that the healthier the market success, the less effort the management will spend on the property. Similar results were also found by Kyereboah-Coleman (2008), who analyzed the relationship in Ghana, the United States, and Malaysia between the Management Board and the company's performance and then found a negative association on the company's performance.

In many surveys, the leadership position of the CEO was assessed by the sum of years in service. As a part of some form of succession plan frequently introduced, managers typically have short tenures in their roles. This is to discourage unnecessarily long-term contracts from being released which leads to higher management discharge costs

if the quality is low. Many researchers report varying results on the connection between managers' terms in office and a company's performance. Kyereboah-Coleman (2007), for instance, has established a negative link between the executive's length of office term and companies' performance in Ghana. Performance-based returns are evidenced in companies where the executive departed before retirement. It means that increasing the office time would decrease efficiency. If the CEO remains with a company for a long time, the value is not a justification for the CEO sales increase until the normal retirement age.

Longer CEO tenure means that based on asymmetry in the information logic, the CEO may have indirect control over the management board. Many investigations have also shown that the office cycle length and audit team structure plays an important role in reporting performance. Nonetheless, no inquiries to this day show how the CEO's final decision maker on the delivery of financial information is linked to intellectual capital through corporate financial accomplishment. This study purposes to seal the gap by looking into the reasonable financial performance of CEO investments at the Nairobi Security Exchange for listed companies.

Chen *et al.* (2011) noted that the probability of CEO turnover decreases with tenure when the CEO age has been controlled for. Thus, indicating that CEOs are becoming more powerful the longer the position is held (Denis *et al.*, 1997; Morck, Shleifer & Vishny,1988). Lausten (2002) and González *et al.* (2015) have arrived at the same conclusions and therefore the control variable CEO tenure was added. CEO tenure is defined as the number of years employed as CEO. The data were collected by hand and CEO tenure was calculated as year t less the CEO year of employment.

CEOs, in their tenure, are obliged to maximize corporate profits, yet at the same time, they are constrained by short-term pressures applied to their long-term strategy. But, how is that tenure related to financial performance? There has been an ongoing debate about the relationship between these two aforementioned variables. CEO tenure can have both positive and negative effects on firm performance, depending on the CEO's life cycle seasons (Millerand & Shamsie, 2001).

2.12. Effects of Intellectual Capital Efficiency, CEO tenure on Firm Financial Performance

In the area of the financial performance of businesses, Morck *et al*, (1988), Hermalin and Weisbach, (1991), there is no study undertaken on the effects of Intellectual Capital. On a conceptual level, several types of research have investigated the impact of IC expertise on company performance. The focus of the business in the knowledge economy moves from financial and physical resources to high-level technology operations. CEOs are trustworthy to create, extend, and refine the IC embedded into the company's employees, departments, and processes (Keenan & Aggestam 2001). In every organization, IC occurs regardless of the efficiency of management boards.

Management directors can build and manage the IC to accomplish the company's competitive advantage and goals. Ho and Williams (2003) explored the relationship between architecture and intellectual property. Their results show that the board's characteristics are not unconditionally related to IC efficiency. There is no defined role of the client quality board. Their findings show that members of the board can be considered an important aspect of HC and may impair the overall performance of ICs of a company.

Cerbioni and Parbonetti (2007) found out that the effects of CG on European biotechnology companies ' intellectual capital disclosure had a positive effect on IC communications. The duality of CEOs, panel settings, and system width have adverse effects on the IC data volume. For British companies, Kraft and Ravix (2008) reviewed CG and IC divulgation procedures. Apparently, the membership of the Committee, the asset arrangement, the leaders of the audit committee, and the number of meetings of the audit committee have very positive relations with each other.

Kraft and Ravix (2008) conceive that CG and information management are not about products or sales, but about business knowledge and skills. Concerning company challenges and the value of the market, corporate governance ensures that stakeholders and executives engage and share in developing expertise, skills, and training strategies to create successful teamwork of interrelated resources and activities. In their study of the interaction of IC and CG in the higher learning institution environment, Saifieddine *et al*. (2009) found that CG and IC are related and CG attracts IC in a business.

The term of the CEO is also used in this analysis as a medium factor. The definition of CEO applies to the length of the CEO's employment in the same company. Wasserman *et al*., (2001) note that the long-tenured CEOs would have a positive impact on the business performance since the management team they have can establish will work effectively to boost the company's performance. CEOs who have been in the industry for longer are an invaluable benefit for company performance as they would have built and learned expertise that would specifically solve the problems of the company. But this is contradictory because the CEO is not prone to various problems. After all, he has spent his entire career in the same atmosphere or business.

Whilst no longer, shorter, medium, or longer lengths of CEO tenure are commonly accepted, Allgood & Farrel (2001) group CEOs in three groups. The CEOs under 4 years of tenure are known as Young CEOs, the Intermediate CEOs under 10 years of tenure but above 4 years of age, and CEOs above 10 years old are categorized as mature.

CEOs play a critical role in founding credibility and confidence in their firms, thereby contributing to improved firm financial performance, enhancing firm economic stability and growth prospects, and attracting investors. CEOs are obligated to increase corporate earner-matter throughout their lifetime. This can have a favorable and adverse impact on their firm's results as well as a negative effect because of the short-term pressure exerted on their long-term CEO plans, which depends on the CEO's life cycle seasons (Millerand & Shamsie, 2001). The first source emerges from the interaction between the company and its inner members, the workers. Longer CEO longevity will only lead to a corporate gain if good partnerships between employees are maintained (Wang *et al*., 2009).

Based on the life cycle seasons of the CEO (Miller & Shamsie 2001), CEO longevity can desirable or undesirable effect on organizational results. According to Hambrick and Fukutomi's (1991) leading the life-cycle concept, the partnership between a senior executive and financial performance is twisted and curvilinear in design. Longer tenure as CEO leads to a benefit for the company only when good relationships among employees are reached (Wang *et al*., 2009). Furthermore, empirical studies have indicated that neither extremely short nor extremely long tenures contribute positively to the financial performance of a business (Hambrick & Fukutomi, 1991).

2.13. Empirical Review

This section describes past studies that have been done linking human capital, structural capital, capital employed, and innovation capital with firm performance. Trochim *et al*., (2016) explicitly note that empirical review is predicated on direct observations and measuring the reality of what you understand of the world around you. The inquiry is predicated on determined and measured phenomena.

Analysis of the intellectual capital of corporations suggests that in the sense of business growth, scholars have studied human resources, social capital, and the value of related capital (Goh, 2005; Kamath, 2007; Joshi *et al*., 2010). Ting and Lean, (2009) as well as Nimtrakoon, (2015), studied the correlation of human capital with the financial performance of companies

Scholars have proposed specific ways to evaluate the intellectual property, pick data, and the interaction between the intellectual resources and organizational success from various regions and industries. Most researchers are of the view that the geographic context of intellectual capital is positively related to intellectual capital and business growth. As an alternative quality to intellectual property, for instance, Ahmed Riahi-Belkaoui (2013) used patent ownership.

In the US retail and manufacturing sectors, multinational companies conducted an empirical study. The positive effect of intellectual capital on company performance has been noticed. In the questionnaire of Tovstiga and Tulugurova (2007), innovative companies in Russia analyzed intellectual capital's impact on the value of a smaller company and concluded that intellectual capital would promote corporate wealth.

Various researches highlighting the role and impact of intellectual capital on the worth of the firm have been done. However, the context of IC in terms of the definition is incredibly massive and quite some authors have outlined key components as evidence for IC. In earlier studies, Edvinsson and Edmund Malone (1997) demarcate IC because of the thought of experience which might be an offer of free advent for the industrial enterprise mercantilism over existence over time. Their findings to boot provide the actual fact that there's a large distinction within both the market and book worth of intellectual capital. Bontis, Chua Chong Keow, and Richardson (2000) give proof that for the property competitive advantage, IC is barely the mixture of structure degree of understanding and individual stage of data of the employees of the business. In their read purpose, IC covers the human capital and its core dimensions.

Within the findings of Moore (1996), IC includes the innovative capital, customer capital, and stage of structure capital. Authors like Blair and Wallman describe that it is not viable to provide a summary and full definition of intellectual capital. Through conducting a survey of 132 top-and-bottom executives, Sharabati *et al*. (2010) scrutinized the connection of intellectual capital to the success of the pharmaceutical industry. They found a strong positive connection and concluded that intellectual capital is effectively managed and an absolute commitment to their success by companies in the study.

Maditinos *et al*. (2010) have defined intellectual capital as being individual, consumer, institutional and creative capital and analyzed both the interrelationship and financial performance relationships between the two entities. They submitted a psychometrically valid form and sorted it for service and non-service to the list of

security companies in Athens. They found that that for each business and non-service sector, human capital blends positive relationships with client and corporate capital.

A study by Chu, Chan, Yu, Ng, and Wong (2011) found no proof to determine that VAIC as a combination live explains money performance. However, constituents of the VAIC were found poignant the money performance of the businesses, with Structural Capital potency having a big and positive impact on productivity, and Human Capital potency poignant money performance negatively. It can, therefore, be determined that this area unit peculiar cases wherever associate degree indirect relationship between the variables was established.

In Asian countries additionally, some studies' findings show the mixed outcome, thereby conflicting the findings of Deep and Narwhale (2014) conducted the study within the country's textile sector from 2003 to 2012. VAIC technique was utilized by Ekwe (2014) when he examining the impact of Intellectual Capital on money performance indices of six extremely rated deposit cash banks in an African country. The study used secondary sources of knowledge and also the professional dancer multiple vary check (DMRT) of multivariate analysis rather than multiple correlation analysis for the check of analysis hypotheses. It found the same result and additional confirmed that the banks disagree in terms of intellectual capital indices and money performance indicators. Thus, banks with a bigger investment in intellectual capital attain a better level of economic performance.

Intellectual capital has become an essential conception for evaluating a company's value. Consequently, companies have shifted their focus to intangible assets, whose nature has the power to allow the creation of a property competitive advantage (Shakina and Molodchik, 2014). Hence, the intangibles area unit expected to be useful

for a corporation through their volatile nature and also the difficulties in their mensuration unremarkably exclude them from money statements (Lopes and Martins, 2015). In fact, Ilmakunnas and Piekkola, 2014) argue that the sole time IC is absolutely evaluated is at mergers and acquisitions.

Amadieu and Viviani (2010) identify two major methodology methodologies for the relationship between immaterial and quality of businesses. The first methodology involves the evaluation of intangible investments and financial performance metrics of the capital market (for example equity returns, retention time returns, Tobin's Q). The second explores the relationship between intangible and financial capital (return on wealth), return on assets (ROE), return on investment (ROI), and non-financial assets (e. g. market share and margin), which can be mostly financial. Shakina and Molodchik (2014) stress the importance of intangibles as strategic assets and as a competitive advantage that is the principal cause of additional profit for a company. They used Economic Value Added (EVA) to determine whether the investment attractiveness of the company was influenced by intangible assets and which factors support or obstruct market value creation through IC. The results corroborate their assumption and indicate that the size (measured by the book value of total assets and number of employees) and the industry in which the company is inserted influence value creation.

Furthermore, consistently with the previous study, the independent variable size (measured by total assets) presented significant results, confirming firms with a higher level of assets tend to generate a higher level of turnover, revealing the presence of scale effects. Pucci *et al.* (2015) analyzed the impact of intangible assets, such as patents, copyrights, brands, and advertisements, on firms' economic performance

through their impact on the level of intellectual capital. Conclusions were taken for the Italian children's clothing industry after the analysis of 45 companies. Intellectual capital was measured using the knowledge capital scorecard method and its correlation with profitability measures, namely, return on investments, return on sales (ROS), return on assets, return on equity, and capital turnover, was evaluated. Empirical evidence suggests that IC value is positively associated with every measure of performance except for turnover, having a high correlation with ROI, ROS, and ROA, which are the performance measures commonly used by entrepreneurs

Posteriorly, the authors evaluated the impact of the intangible assets on IC, proving a significant contribution of their interaction on the IC level. Hence, the authors corroborate the possibility of using intellectual capital value as an indicator that measures the contribution of certain intangible resources to firm results, highlighting the importance of IC to economic performance.

In a recent paper on the impact of IC components upon performative results, Nadeem *et al*. (2016) suggest that the relationship between IC and corporate output is two-way and should therefore be called complex. The researchers calculated the relationship between the IC performance and the activities of 774 London Stock Exchange businesses, to conclude on this hypothesis. Results show that value-added intellectual coefficient (VAIC), in particular, to return on capital or return on equity, is linked positively and significantly to corporate results.

Intellectual capital pilots (such as intangible assets) have found that the' most important return metric,' turnover, is significant for the world's top 30 airlines (Lopes *et al* 2016). In the estimation of this productivity metric, the results obtained confirm the importance of human capital, namely the costs and salaries of workers

and the scale of the management board and organizational capital. The relation between IC, however, and other metrics of quality like ROA, ROE, and ROS could not be confirmed.

Not many studies discover evidence on the negative or null influence of intangibles on performance. Nonetheless, an investigation on the French wine companies' financial performance and its relation with intangible investments came to such a conclusion. Amadieu and Viviani (2010) analyzed the financial statements of 207 SMEs of the wine industry and concluded on a negative effect of intangibility intensity on financial performance, measured by using the return on assets. The authors state that, for this industry, the intangible property was used ineffectively and, to warranty financial success, intangible expenses should be accompanied with the aid of organizational and managerial changes.

Bubic and Susaz (2015) analyzed the effect intangible assets have on the profitability of Croatian companies and assessed their relationship with a bankruptcy status. They found out that companies that invest in intangible assets are much less probably go bankrupt. Despite that fact, they found no strong evidence that helps a positive relationship between funding in intangible assets and profitability ratios (ROA, ROE, net earnings margin (NPM), gross income margin (GPM) and return on capital employed (ROCE), except EBIT (earnings before interests and taxes) and EBITDA (earnings before interests, taxes, depreciation, and amortization), which constantly amplify as the investment in intangible property increases. These studies enable for the conclusion that, even though there is no consensus related to the contribution of intangibles to performance, their significance has been the focus of the research in the

discipline of accounting and finance in the ultimate two a long time (Nadeem *et al*., 2016), which emphasizes the relevance of this subject matter.

2.14 Control variables

A growing number of scholars have investigated the relationship between firm age and survival (Evans, 1987a, b; Mata and Portugal, 2004; Marcus, 2006), but the results have not been clear-cut. Firm age appears in the empirical finance literature in some reports. In studies on organizational diversification (Villalonga, 2004) and on financial restrictions (Kaplan and Zingales, 1997), it is a control variable. But none of these findings have specifically focused on age. By concentrating specifically on surveys of young companies, (Calvo, 2006) has investigated age effects. He tested Gibrat's Law for New, Young, and Innovative Spanish Companies in his article: "All the findings reject Gibrat's law and support the proposition that smaller firms have grown larger." Size and age variables implicitly used in the regression model by Coad et al. (2013) find a strongly negative sign of the age variable on the EBITDA-to-sales ratio. Gaur (2011) investigated the impact of multiple factors on operating profit and return on net worth, including the age variable, but the age variable did not appear to be statistically significant. According to a study conducted by Maja and Urak (2017), findings revealed that company age is a significant explanatory factor in deciding financial performance.

The industry influence captures the effect on company performance of the structural characteristics of industries. In the IO tradition, this impact has a clear theoretical basis. Emerging from the early works of Mason (1939) and Bain (1951, 1956), the IO approach specifies that the contextual conditions associated with the field in which a business competes have a deciding effect on the output of the company. Thus,

business success should be related to the requirements of the sector. Although this literature has dealt mainly with business profitability, its application to other company success metrics. The presence of sectors of the market will force executives to match their business strategies with this intra-industry scope. The industry influence captures the effect on organization performance of the structural characteristics of industries. And where CEOs face the same general external environment (e.g. the sector), they will react differently to the risks and opportunities seen in that context. When financial performance indicators are used as contingent variables, industry effects range from 4 to 20 percent (Mauri and Michaels, 1998). In a study of Spanish companies, González and Ventura (2002) were the first to collectively estimate a strategic group impact along with firm and sector effects. In the study to define the causes of variance in company results, Noël and Jef (2012) showed that industry sectors would impact the interpretation of strategic choices or options and consequently the bottom line of performance.

Firm size was controlled in this study. Some academics, such as Loderer et al. (2017), proposed that in the context of a preference bias that might result from failed young businesses being more likely to be chosen out of the population, there may be "reverse causality" between company age and performance. Most researchers have found in the literature that there is a significant relationship between the size of the firm and the profitability of the company (Doğan, 2013). The result of Banchuenvijit (2012) found that the firm size is negatively linked to ROA in terms of total assets. The Tzelepis and Skuras (2004) research offer evidence that the scale of the company has a marginal influence on the success of the company. In addition to this favorable and negative interaction, some of the scholars found that the company's size had an insignificant effect on the viability of the company. Consequently, as we consider

these above conflicting observations about the effect of the size of the company on the viability of the company, uncertainty, and analytical investigation are still required. Sritharan, Vinasithamby (2015) on the Corporate Profitability Size Study. The results of the study reveal that the size of the business is favorably linked to the profitability measure of asset return. A common theme in strategic management research has been the size-profitability relationship (Villanueva-Villar et al., 2016). In general, the size of the company is known to play an important role in understanding sustainability for many variables; a larger degree of organizational diversification (Benito-Osorio et al., 2018), among others, owing to the significant impact of economies of scale (Sellers and Alampi-Sottini, 2018). However, in studies such as Whittington (1980), in which size does not seem to have an effect on profitability in a sample of UK businesses, Becker-Blease et al. (2010) have obtained opposite findings, identifying a negative and substantial correlation between size and performance in a sample of US manufacturing sectors and Niresh and Velnampy (2014), who did not discover any relationship with a sample of listed manufacturing firms in Sri Lanka between size and profitability. The effect of the company's size on the relationship between independent and dependent variables with its effect on the regression equation has been controlled in the current study.

2.15 Research Gap

Arising from the extensive theoretical and empirical review, it is evident that there exists a significant body of literature on intellectual capital and firm performance. Scholars have studied the impact of intellectual capital on firm money performance is totally different contexts over different time intervals. Nadeem (2006) used 100 corporations listed for the amount 2005-2014 to examine the connection between

Intellectual Capital and Company's performance in developed, rising, and frontier markets.

Reviewed Kenya research did not focus on financial performance (Ngugi *et al*., 2012) and neither focused on all listed companies. Njuguna (2014) examined state-owned corporations ' intellectual property and firm performance Ngari *et al*. (2013) focused more on listed commercial banks leaving out many other firms listed NSE in Kenya. Kariuki (2014) examined the effect of different combinations of predictor variables (intellectual capital, corporate reputation, and corporate culture) on corporate performance among NSE listed companies. The focus period was four years between 2009 and 2012.

The first is connected to the generally accepted typology of IC in the literature, where elements of IC are usually put on an equal footing. It is very possible, though, that they will be compared in terms of their relation to firm financial results owing to its unique characteristics. The first philosophical discrepancy refers to the absence of significant studies on the difference between structural capital and capital of innovation. Vishnu and Kumar Gupta (2014), Chen et al. (2005), Cheng et al. (2008) have carried out several studies. For the following purposes, these studies substitute the SC variable with innovation capital for which R&D can be used as a proxy. There have been inconclusive and mixed findings on the impact of SC on company financial efficiency. The present study tried to disintegrate SC and INC as distinct and separate components of Intellectual Capital to fill this gap.

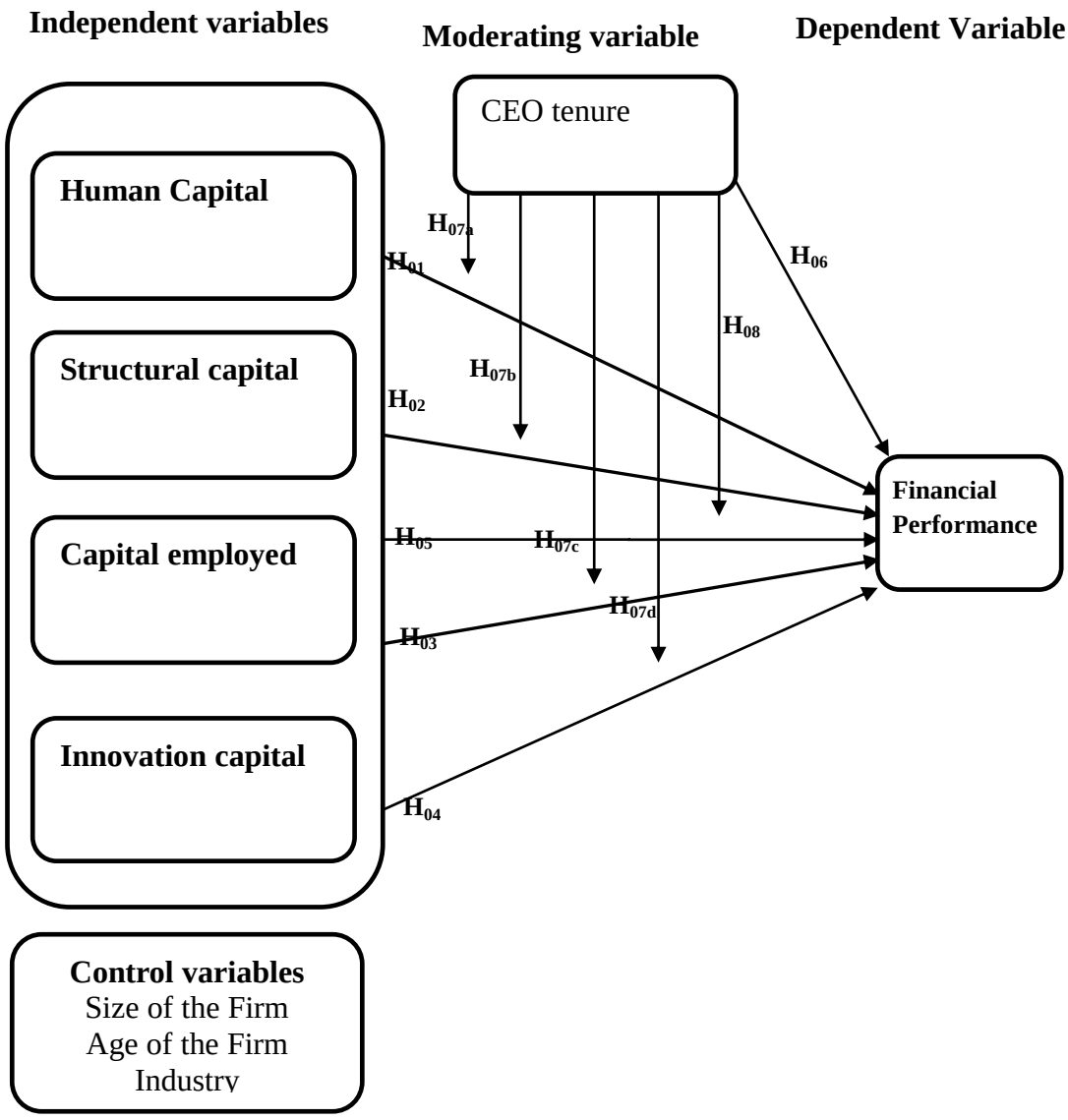
Firm financial performance is a multidimensional concept involving the owners and other stakeholders of the business to generate meaning. The current study also used an adjusted version of VAIC (called M-VIAC) to fix some of the issues in the original VAIC model, based on this fact. Monetary-based models cause firms or sectors and

even countries to be compared by consumers. Another strength of using quantitative methods is that these models use freely accessible, typically audited, the knowledge that improves the findings' reliability. Furthermore, previous studies have focused selectively on companies that rely extensively on intellectual capital, thus reducing the generalization of findings when it does not provide an ability to explore inter-industry consequences. Once again, this discrepancy in performance is due either to industry differences or to the lack of sufficient data, which in most underdeveloped countries has always been an issue. The current study overcame the limitation by incorporating a more representative sample of firms listed on NSE over twelve years with observation data set of 576.

Also, other considerations that influence the relationship between intellectual capital and firm financial performance have not been adequately studied by analysts. The present research incorporated CEO tenure as a moderating variable and its effect on the relationship between intellectual capital and firm financial performance, in comparison to previous studies. The research suggested that the joint effect of intellectual capital, CEO tenure, and company financial should be examined to assess if its effect is greater than any of the predictor variables, drawing from the Agency, Dynamic capability, and RBV theories respectively. The existing literature review revealed that there was no known research directly focusing on the relationship between the tenure of the CEO and the financial performance of the company.

2.16 Conceptual Framework

The conceptual model is grounded on the theories of Agency, Resource base and Dynamism capability to visualize a conceptualized interface among intellectual capital components and firm financial performance. The model further conceptualized CEO tenure as a moderator.



Source: Author, 2018

Figure 2. 1: Conceptual Framework: Effects of Intellectual Capital, CEO tenure and firm financial Performance

Figure 2.1 presents the model of the study. Basically, it postulates that there is a direct and positive relationship between the sub-elements of intellectual capital efficiencies

and firm financial performance as measured by Tobin's Q. The first step is to investigate IC components and firm financial performance and then followed by the moderating effect of CEO tenure on IC and firm financial performance. The current knowledge-economy business world widely recognizes that intellectual capital is a source of value generation, firm financial performance.

A conceptual framework for the present study shows the effects of CEOs tenure on the relationship of Intellectual capital on the financial performance of listed firms in Nairobi and has been depicted in Figure 2.1 above which conceptualizes that firm's intellectual capital (Human, Structural, capital employed and Innovation) influence on the financial performance of the listed firms in Nairobi Security Exchanges moderated by CEO tenure.

Two novel channels by which CEO tenure impacts company performance were suggested by the conceptual framework. The first channel derives from the partnership between an organization and one of its most massive internal interested parties: employees. Longer CEO tenure will rarely transform directly into a superior performance without the help of constructive employee relations (Wang, He, and Mahoney, 2009). However, successful CEOs can exploit their expertise and learning reservoir (March 1991; Vera and Crossan, 2004) to unify the workforce and improve the association of workers with the company, which can have a positive effect on company success (Skaggs and Youndt, 2004; Bergeret al., 2002; Hitt et al., 2001). If so the degree to which CEO tenure impacts company-employee relationships can partly account for the CEO tenure's performance effect.

The second channel suggested by this study was embedded in the interaction between the company and its main external stakeholders, clients. Even experienced CEOs

cannot create strategic advantages for their firms without acquiring consumers who are pleased with the product offerings of the company (Day, 1981). In particular new CEOs are attuned to the external environment (Hambrick and Finkelstein, 1987). They strive to learn from and respond to external environments by exploiting different business and customer-related knowledge sources (Chaganti and Sambharya, 1987) and championing product innovations (Wu et al., 2005).

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This section presents the methodology adopted by the study. Herein is discussed in detail the philosophical paradigm, research design, the population, and data collection method, instruments, and analysis technique, model specification and diagnostic statistics.

3.2 Research Philosophy

This study involved the significant phenomena of listed companies at the Nairobi Security Exchange, intellectual capital, chief officer tenure, and financial performance. This study's end product was a generalization of the causal effect. The philosophy of the current study was outlined as a collection of views on the data being examined in the study**;** inside that the philosophical assumptions justify the approach achieved in the study objectives (Bryman, 2012). Burrell and Morgan (1994) contend that academics need to be compelled to establish their investigation's principal acceptable paradigm. This study followed a positivist research paradigm within which the hypotheses were developed to support the notion of the consequences of the intellectual capital parts on the firm financial performance that were investigated and through empirical observation examined using the researcher’s tools of research supported existing theories. This approach followed similar lines as previous researches conducted to link company social capital to firm performance (Coleman, 1975; Lin, 1982). Whereas the principal novel parts during this research study enclosed intellectual capital elements, specifically Human Capital, Structural Capital, capital Employed and Innovation Capital, were analyzed within the overall model, that were drawn from previous analysis that equally created use of the positivist

approach. Positivism is knowledgeable by the principles of logic, veracity, and cogency and it places nice stress on what is often through empirical observation and directly discovered and older by quantitative and experimental statistics (Eriksson & Kovalainen, 2008; Smith, athlete & Jackson, 2008). The positivist paradigm requires that only phenomena can genuinely be warranted as knowledge. The purpose of the theory was to make postulations that were empirically verified; knowledge was arrived at through the gathering of facts that provide the basis for laws, and science must (and presumably can) be conducted in a way that is value free. Therefore, the current research study utilized the positivism paradigm since its hypotheses, regarding the consequences of intellectual capital, chief officer tenure on firm financial performance, and connected theories, was through empirical observation investigated using researchers' analysis tools instead of their values.

3.3 Research Design

The research design conjointly affords the rules and directions to be followed when dealing with the research drawback (Polit & Hungler 1993). Collis and Hussey (2003) note that a search style could be a manner of coming up with knowledge assortment to conduct associate degree inquiry and extract the foremost important and valid findings. A research design is the 'procedures for collecting, analyzing, interpreting, and reporting data in research studies' (Creswell & Plano Clark 2007). It is the overall plan for connecting the conceptual research problems with pertinent empirical research. It is the overall plan for connecting the conceptual research problems with the pertinent (and achievable) empirical research. In other words, the research design sets the procedure on the required data, the methods to be applied to collect and analyze this data, and how all of this is going to answer the research question (Grey, 2014)

The current study was mainly concerned with causes or the „why" factor about some phenomenon. To achieve the study objectives, an explanatory research design was deemed appropriate. According to Robson (2002), explanatory research would seek to look for causes and reasons and provides evidence to support or refute an explanation or prediction. It is conducted to discover and report some relationships among different aspects of the phenomenon under study. This research design was used to explain how IC dimensions impacted on firm financial performance moderated by CEO tenure. When reviewing the literature to formulate hypotheses or use a theory of change, the major challenge becomes one of specifying the nature of the relationships among independent, dependent, and/or moderating variables, each of which may be static or dynamic.

The critical issue is to have sufficient measurements to model the hypothesized form of change appropriately. This explanation of correlations is appropriately described by incorporating Longitudinal research design. Longitudinal can be taken as emphasizing the development and shift of a unit or units in a broad sense. In essence, longitudinal research explores processes over multiple periods following a precise picture of construct dynamics. This study adopted a longitudinal research design to explain the change in the independent, moderating, and dependent variables respectively because the dynamic representation of constructs captured different forms of variance and thus required different theories to explain the variability over some time.

3.4 Target Population and sample

The study target population included all firms listed in the Nairobi Security Exchange in Kenya. According to CMA reports (2016), there were 67 listed firms in Nairobi Security Exchange during the period 2006-2017. However, listed firms that were

included in the study were those that were fully trading on NSE during the study period. Those firms that were listed after 2006 and those that were suspended were omitted from the study sample.

Firer and William (2003) and Shiu (2006) posited that firms with a negative net worth or reduced value of Human or Structural Capital did not form part of the study sample. Companies whose information was unreachable (absent from the yearly financial records, due to deregistration or other reasons) were exempted from the sample. Therefore, a sample comprising of 48 firms that met all the above criteria were available for this study, thus yielded 576 firm-year observable data. In particular, the sample size is essential for the methods of data analysis to be used. Although the sample size between 30 and 500 is usually appropriate for many scholars at a confidence level of 5 percent. The bigger the data set the estimates or results of the coefficients will become more robust (Altunışık et al., 2004). The size determination should reflect the quality of the sample in this broad interval (Morse, 1991, 2000; Thomson, 2004).

3.5 Data Types and Sources

The data type used in the analysis was a 12-year panel data that incorporated time series and cross-sectional data. The data collection method was secondary research in nature. The details were taken from the 2006-2017 manuals of the Nairobi Security Exchange. This was achieved by accessing web-based websites, capital markets journals, the annual financial reports, and the repository by using desk search techniques. These data were considered credible since they have been audited and filed with the Nairobi Security Exchange. The data was collected using a document analysis guide (appendix 1). Documentary analysis, according to (Bowen, 2009)

provides a good source of background information that may not be captured by other sources.

3.6 Measurement of Variables

A characteristic of research is calculating variables in the theoretical framework (Sekaran and Roger, 2013). The method of assigning numbers to that analysis parameter (Lee and McKinney 2012), is simply the measurement of a variable. Leedy and Ormrod (2010) have argued that the scientist cannot test the theories and find solutions to the problems of study if the variables are evaluated in any manner.

3.6.1 Dependent Variable

Financial Performance

The dependent variable was firm financial performance. The present study used Tobin's Q as the dependent variable; that acted as the proxy for firm financial performance. Tobin's Q ratio, as reflected in its investment strategies, is an indicator of a business ' growth opportunities. It contrasts the market price of the product with the replacement cost of the assets of the company. It also means the lower the actual return on investment, the higher the value of Q.

Using Tobin's Q overcomes some of the book-to-market (B / M) related problems using the cost to replace capital while estimating the value of the company. Tobin's Q is measured by the value of the firm divided by the replacement value of its assets (Chung & Pruitt, 1994). The utilization of Tobin's Q quantitative relation of value to value neutralizes the impact of various policies from one company to a different company or from one country to another country. A Q between zero and one is taken

into account as low and means the worth of the firm is under its assets and would implicate that the firm can be undervalued. Tobin's Q < 1 Description found in undervalued stocks, management has failed to manage the company's assets, with low potential for investment growth.

Tobin's Q= 1 describes that firm security is not through in the average circumstances, management is static in asset management. Tobin's Q > 1 describing that securities in condition overvalued, management succeeded in managing the assets of the company, high investment growth potential (Tobin & Brainard, 1968 and Tobin, 1969; Lang, Stulz & Walkling, 1989 and Fiakas, 2005).

$$\text{Tobin's Q} = \frac{BV\ total\ \ assets - BV\ common\ \ Equity + MV\ common\ \ Equity}{BV\ total\ \ assets}$$

where BV is book value and MV is market value.

The above methodology has been used by Gomez-Gonzales, Rincon, & Rodriguez (2012). Tobin's Q has equally been utilized by Dotzel, Shankar, & Berry (2013); Wang (2013), Kweh, Chan, & Ting (2013). Employing the approach of Value-Added Intellectual Coefficient (VAICTM) consists of a sum of human capital efficiency (HCE), structural capital efficiency (SCE), and capital employed efficiency (CEE):

3.6.2 Independent Variable

This study adopted the Value-Added Intellectual Capital (VAICTC) technique developed and used by Pulic (1998; 2001 and 2002a, b). Other scholars who have used VAICTC method include (Mavridis, 2005). VAICTC in the current study included four elements of intellectual capital, thus the sum of the total of the four ratios calculated was HCE, SCE, CEE, and INCE, and indicates the intellectual

capability of the listed firms. They formed Independent variables combined as value-added intellectual coefficient (VAIC) factors.

In the present study, VAIC was further modified to Modified Value-Added Intellectual Capital (MVAICTC) an amalgamation of the sum of four indicators of Value-Added Intellectual Capital namely: human capital efficiency (HCE), structural capital efficiency (SCE), physical capital employed efficiency (CEE) and Innovational capital efficiency (INCE) and which may define financial performance. According to $VAIC^{TC}$ the total revenue (out) and total expenses (input) represent the value that the firm produces by employing its resources and capital. This study adopted the same steps as were done by previous scholars in computing $VAIC^{TC}$ efficiency.

Independent Variables: Value Added Intellectual Coefficient ($VAIC^{TC}$) Components:

i) Capital employed efficiency (CEE),
ii) Human capital efficiency (HCE) and
iii) Structural capital efficiency (SCE).
iv) Innovation capital efficiency (INCE)

The procedures for computing VAIC were: first was to calculate Value Added, which was derived from the difference between outputs and input. Value added (VA) refers to the newly created value, calculated for a given firm during a particular fiscal year. It was obtained as the difference between inputs and outputs of the operating activities of the firm.

$VA_i = OUTPUT - INPUT$ ---------- (1)

Where OUTPUT is the sum of earnings from sales throughout a financial year. While INPUT is the sum of costs and expenses incurred by the firm during that given fiscal year (excluding labor expenses, which our employees' compensation and all expenses that are related to their training and development. In the present research, the output is comprised of the sum of all earnings per financial year in every participating company. On the other hand, input comprised the sum of overheads and expenditures minus workforce salaries and costs incurred for the firm's on-the-job employees.

CEE has the result of all VA distributed among all capital employed (CE) in which case CE is the net worth of a company's overall resources.

$CEE_i = VAi / CE_i$ ---------- (2)

Where CEE_i, capital employed efficiency was given as the coefficiency of company i, VA_i, VA for firm i, and CE_i, book value of the net assets for firm i. Consistent with other scholars on intellectual capital (Edvinson, 1997; Sveiby, 2001; Pulic, 1998) who argued that total salary and wages were indicators of firm human capital. HCE was computed as follows-

$HCE_i = VA_i / HC_i$ ---------- (3)

In computing SCE_i, Structural Capital Efficiency (SCE) is the indicator that shows the share of SC in value creation by a firm. It is the structural capital for every increase in value. This study assessed a company's SC

Thus $SC_i = VAi - HC_i$ ---------- (4)

Where SC_i, SC for firm i, VA_i, VA for company i, and HC_i; total compensation expenditure for company i. SCE is the result of a company's SC for every VA.

$SCE_i = SC_i/VA_i$---------- (5)

Where SCE_i, SC efficiency coefficient VA for company i, SC for company i, and VA_i, VA for firm i. In computing $INCE_i$, the study evaluated a firm's INCE divide by firm's book value of common stock.

$INCE_i$ =INC/VA---------- (6)

R&D expenditure/Book value of common stock, where $INCE_i$, INC efficiency coefficients VA for company i, INC for company i, and VA_i, VA for firm i. Where $VAIC^{TC}$, VA intellectual capital for company i, CEE_i, capital employed efficiency for company i, HCE_i, HC efficiency for company i, and SCE_i, SC efficiency for company i, $INCE_i$, INCE efficiency for company i.

$MVAIC^{TC}= CEE_i+ HCE_i+SCE_i+ INCE_i$---------- (7)

3.6.3 Moderating Variable

According to (Olson, Parayitam, & Bao, 2007), a moderating variable is defined as a factor that changes the effect of the independent variable on the dependent variable. Tenure is defined as the number of years an individual CEO has been employed in that position in a respectful company (Cornett, Marcus, and Tehranian, 2008). CEO tenure has been studied to have a relationship either positive or negative between intellectual capital and firm performance. In this study, CEO tenure was assessed by the number of years since one was taken as CEO to a given firm consistent with previous studies (Lin, Liao and Chang, 2011 and Souder *et al*., 2012) for the firm *I* in year *t*. CEO tenure serves as a proxy for the experience and interests of a CEO within and outside the company (Hambrick, 2007). To minimize the problem of heteroscedasticity in error terms, CEO tenure was transformed using a natural

logarithmic function. Huse (2007) similarly transformed CEO tenure into a natural logarithm function to enable further data manipulation.

3.6.4 Control Variables

Three variables were controlled in this study. During the analysis process variables that had an influence on the model were controlled to produce the net effects of intellectual capital and financial performance. Such variables were used in previous studies and verified that they had a potential influence on firm performance ***Firm size:*** the size of the company was chosen because it was essential for future disclosure research (Hossain and Hammani 2008). Firm size is chosen because it has been found by previous studies to be related to the difficulty and information processing demands placed on CEOs (Henderson and Fredrickson 1996). Measuring the size of the company was consistent with other studies done by Haniffa and Cooke (2005), Freedman, and Jaggi (2005). The size of the firms has an effect on their IC components and the financial performance of the company (Nimtrakoon, 2015; Chan, 2011). Previous studies calculating the size of the organization's total assets by popular logarithm include Pouraghajan, (2012), Iavorskyi, (2013) and Meressa, (2016). The natural logarithm of total assets for measuring the firm size in this study, as it has been established in previous research, and that firm asset as such appear as a logical denominator for size as such. The size of the company was denoted as FSize.

Firm age: The age of the company was denoted as FAge. It was determined by counting the company's age from the establishment date of the said company. Firm age is usually a monitor or an econometric device, and it is sometimes a proxy for non-observed variables like education (Pastor and Veronesi, 2003). The finance literature also discussed age-related productivity problems, although the age and

tenure of managers within the company could also trigger a suspicious relationship from different angles (Finkelstein and Hambrick, 1990). Ultimately, the literature on financial management indicates a relationship between age and profitability. Therefore, the present study followed Fama and French (2001 concluded that firms were "born" on the NSE listing in the year of their first appearance. Consequently, the company's age is the number of years (plus one) that have already passed since the Company's IPO year. This is done to eliminate the effect of zero ages among the firms.

Industry sector: The industry in which a firm is involved influences performance practices according to multiple studies (Habbash, 2015). Some previous studies tracked the effects of the industry simply by focusing on a single industry (Paek *et al*., 2013) or by distinguishing between manufacturing and non-manufacturing sectors only (Barnea & Rubin, 2010; Waddock & Graves, 1997; Loughran and Ritter, 1995). However, using manufacturing to create dummy variables by assigning "1" to firms in the manufacturing sector and "0" to the rest is one of the most common ways of controlling for a firm's performance. This study followed the same line with those scholars ' approaches to monitor the industry's specific effects on firm performance.

3.6.5 Operationalization of the Research variables

The study has four independent variables, a moderator variable and one dependent variable as shown in the table 3.1

Table 3. 1: Summary of Measures of Variables

VARIABLES	Symbols	MEASUREMENT	EMPIRICAL STUDIES
Dependent variable			
Financial performance	Tobin's Q	Market value plus accounting of total debt /total assets	Karaca and Ekşi (2012), Hsu, Hsiao and Li (2009)
Independent variables			
Value added	VA	Net sales revenue-Cost of goods sold-depreciations	Basyith (2016)
Human capital	HC	Total expenditure on employees	Basyith (2016), Saeed *et al*, (2015), Razak et. al., (2016)
Human capital efficiency	HCE	VA/HC	Basyith (2016), Saeed *et al*, (2015)
Structural capital	SC	VA-HC	Basyith (2016), Saeed *et al*, (2015), Poh *et al*., (2018),
Structural capital efficiency	SCE	VA/ SC	Basyith (2016), Saeed *et al*, (2015),
Innovation capital	INC	Total R&D expenditures /VA	Basyith (2016), Saeed *et al*, (2015)
Innovation capital efficiency	INCE	INC/VA	Basyith (2016), Saeed *et al*, (2015)
Capital employed	CE	Physical capital financial asset-intangible	Basyith (2016), Saeed *et al*, (2015), Thakur, (2017)
Capital employed efficiency	CEE	VA/CE	Basyith (2016), Razak et. al., (2016), Saeed *et al*, (2015).
Value added intellectual capital	VAIC		Isanzua, (2015)
Moderators			
CEO Term of service	CT	Period of time in years since the appointment of the CEO	Combs *et al*., (2007)
Control variables			
Firm Age	FAge	Period of time in years a firm has existed since registration by stock exchange	Eriki (2015)
Firm Size	FSize	natural log of total assets	Laeven *et al* (2014),Meressa, (2016)
Industry	IND	Dummy manufacturing sector, = "1" and "0" else where	

Source; Researcher, 2018

3.7 Data Analysis and Presentation

3.7.1 Descriptive Statistics

For the presentation of data, mean, standard deviation skewness, and kurtosis was used. It offers statistical and graphical procedures for a clear and understandable way of summarizing a collection of data. Descriptive statistics sensibly enable the study to simplify large amounts of data. Descriptive statistics were used to explicitly summarize and understandably represent empirical findings (McDaniel and Rogers, 2010). It is intended to define the information characteristics. The feature of descriptive statistics is to display the characteristic of the sample, according to Zikmund *et al*. (2013).

3.7.2 Data Transformation

The only reason scientists use software transformations was to increase the normality of variables. The data must be converted into asymmetric representation until a trust interval is established where the data are shown to be substantially distorted. The confidence interval may then be translated to the original level if desired, by using the reverse transformation applied to the results. Data can often be modified to allow analysis. Another explanation of why transformation was implemented is increased interpretability, even if there is no formal statistical analysis or simulation (Kuhn, & Kjell, 2013).

3.7.3 Correlation Analysis

Correlation and multiple regressions analysis were used to estimate the causative relationship between intellectual capital and firm performance what is more as various variables were chosen. For the analysis of correlation and regression, SPSS version

twenty package was used. The statistic indicates the direction of the affiliation, whether or not positive or negative (Bryman & Bell, 2007; Field, 2009). Therefore, for all instances of amount regression, the statistic is between-1 and+1. If the statistic is one (a good positive correlation), it implies that if one variable can increase or decreases, the alternative variable can increase or decreases by an identical amount (Saunders *et al*., 2003).

This combination would also indicate that none of the two perfectly correlated variables were related to any other variable. If the constant correlation is below one, this implies that two variables within the analysis are related to various variables (Hair *et al*., 2009). A constant correlation of-1 (a complete negative correlation) indicates that the united variable can increase, the alternative variable decreases by an identical amount and contrariwise. To a lower place, in this case, the two dead connected variables weren't related to another variable. If there's no correlation between variables, the correlation is zero that suggests that the variables weren't connected in any methodology. Furthermore, this study analyzed data as an alternate approach exploitation panel knowledge analysis technique with mounted and random result estimators combined with pooled regression toward the mean. The exploitation of all three techniques helped make sure of the meta-analyses ' and robustness of the findings.

3.7.4 Regression Analysis

This research determined the coefficient of multiple correlations or the explanatory power of the modified model "R2" to check the reliability of the model's linear fit. Multiple regression models were used here because many independent variables existed. Furthermore, with the range of explanatory variables in the model, this figure

consistently increases. The analysis further examined the derivative of R2 called the modified coefficient of correlation in this context. In the analysis, the determination coefficient (R-square) was used to demonstrate the model's predictive and explanatory strength. The current study therefore utilized hierarchical multiple regression modelling to check the research hypotheses

3.7.5 Tests for Moderation

The use of hierarchical multiple regression analyses to check for moderator influence has been used by Baron and Kenny's (1986) and Frazier *et al*. (2004). Procedures were also used to evaluate and interpret the terms of communication recommended by Aiken and West (1991). All predictor variables were focused on the recommendations made by Aiken and West (1991) to reduce multicollinearity between the interaction terms. Mean deviation scores were however determined before multiplicative definitions of communication were defined. The interaction test is whether association terms account for a significant percentage of the variance after partially the main effects of the predictors in the first step of the analysis

Moderation occurs when the relationship between two variables varies depending on the level of the other variable in magnitude, direction, or statistical significance. To evaluate the effects between the variables and to test the hypotheses, a hierarchical multiple regression analysis was done. To test the effects of certain predictors, regardless of the influence of others, the hierarchical regression model is used to determine a fixed order of entry for variables (Pallant, 2010). A hierarchical model of regression was used to achieve this. Only some of the variables were used simultaneously throughout each point in the hierarchical regression analysis. At each step, R2 was determined to find out the incremental change with the inclusion of the

most recently entered predictor and applied exclusively to the predictor. The advantage of using hierarchical regression through a sequence of F-tests was to monitor the inclusion of variables; each stage of the interactive method was closer to evaluating the true value of each Intellectual Capital element's contribution in this case

The determination coefficient, R2, calculated the part of Y's total variance explained by understanding X's value. Multiple regression analysis and hierarchical moderated regression as modelled by Barron and Kenny (1986) were used to evaluate the study hypotheses in two phases. The most important step was the control variables regression against the financial performance of the company. Second, IC variables declined for direct effects with the financial performance of the company. Third, in opposition to the dependent variable, the interaction term was introduced. Fourth, the interaction term between each independent and moderator variable was calculated by multiplying the two variables yielding a product term that represents the interaction effect which was done at a different stage for each individual interaction.

3.8 Diagnostic statistics

3.8.1 Normality tests

Inferential statistics are meant to infer whether or not there's an underlying relationship between the individual variables for functions of serial analysis. The variables were subjected to normality tests to ascertain whether or not the information provided was unremarkably distributed or not. To understand the choice required as the rule was that if the p-value was larger than 0.05, H0 wasn't rejected and H1 was

rejected if the p-value was a smaller amount than 0.05, H0 was rejected whereas H1 was failed to be rejected.

Normality refers to the residuals being unremarkably distributed regarding the expected variable quantity scores. To check normality, "normality plots with tests" was run in SPSS, the program generating each a descriptive table and a bar graph. The descriptive table displayed a five-hitter cut means, which was compared to the initial mean delineated higher than to assess whether or not extreme scores had a robust influence on the average (Pallant, 2010). This table also enclosed skewness and kurtosis values, providing info regarding the distribution of scores on the continuous variables. A skewness and kurtosis worth that falls between the vary of – one and 1 is deemed acceptable and indicates a standard distribution (Muthen & Kaplan, 1985).

3.8.2 Multicollinearity Test

Multicollinearity arises when in a regression model there will be a linear relationship between two or more independent variables (Pedace, 2013). It is a statistical situation in which certain independent variables are highly correlated in a multiple regression model. It is an unacceptably high level of intercorrelation between independent variables, so it is not possible to separate effects from independent variables (Garson, 2012). According to Lauridsen and Mur (2005), the correlated predictors provide redundant data on the responses when multicollinearity occurs. The variance inflation factor (VIF) was used as a multicollinearity test in the current study. Variance inflation factor (VIF) is a factor that increases the variance of the given partial regression coefficient due to the extent of correlation provided by the variable with other predictors in the model (Dennis, 2011). As a rule of thumb, lower levels of

Variance Inflation Factor (VIF) are optimal as higher levels of VIF are known to adversely affect results associated with multiple regressions.

The explanatory variables should be correlated to some extent, but if they are highly correlated, it is not possible to determine the separate influence of an explanatory variable on the criterion variable to test for the inflation factor (VIF) and tolerance values for multicollinearity. The VIF indicates whether a predictor has a strong linear relationship with other predictor variables that raise concerns when VIF is 10 or above (Hair *et al*., 2009). A tolerance of less than 0.2 suggests a serious problem of collinearity. A VIF value above 5 suggests multi-collinearity and an average VIF above 2 should be of concern (Hair *et al*, 2009).

3.8.3 Heteroscedasticity Test

Heteroscedasticity means earlier terms of error influence other terms of error and thus break the statistical assumption that the terms of the error have a constant variance. To test for residual variability in the regression model used, a homoscedasticity analysis is performed. If the terms of the error vary equally, a normal distribution will occur. Heteroscedasticity is considered to be the lack of an equal variance level for each independent variable value. The Breusch–Pagan test developed by Breusch and Pagan (1979) has been used to assess regression homogeneity. Heteroscedasticity has been determined in this research since it can nullify relevant statistical measures that suggest that the modeling errors are uncorrelated and uniform and also that their variances do not differ with the effects being modeled (Johnston, 1972).

3.8.4 Stationarity Tests

Statistics from the board (or longitudinal) is transversal and time series. There are several individuals, each with repeated measurements at different periods (Park, 2009). A dataset panel contains n individuals or subjects (e.g., companies and states), each of which includes T observations calculated at 1 to t periods. The combination of time series and cross-sectional data increases the quality and quantity of data used in this analysis by making it impossible to use just one of these data sets. Models such as the constant coefficient model, the fixed and random effect model, among others, were used in different contexts to estimate the implementation and appropriateness of the panel regression analysis. The OLS can estimate a strictly distributed delay model, but in the case of multicollinearity can have minimal utility. The relationship between unit roots and non-stationarity is so clear that some econometricians use the words interchangeably, although they agree that many factors other than unit-roots may cause non-stationarity (Studenmund, 2017).

A stationary series is one whose basic properties are time-invariant, i.e., its mean, variance, and covariance, which do not change over time (Gujarati, 2013). A non-stationary set, on the other hand, has one or more fundamental properties that change over time. The major consequence for regression analysis of non-stationarity is the spurious correlation that inflates R2 and the non-stationary t-scores which in turn leads to incorrect model specification.

The study used data from the panel and so it was necessary to determine if the variables were stationary or non-stationary. Each time a finite variance and uniform oscillations from the mean are observed from a stationary sequence (Baltangi, 2005).

Therefore, testing was required to determine whether the variables had a uniform mean and variance over time.

Deceptive inferences may be possible if the information collected is not static and acquired regression models may be invalid or influenced by abnormal regression problems. Augmented Dickey-Fuller Test (ADF) was used as the test in the current study to verify the variable's stationary rate. Time series data consists of observations that can be represented by some stochastic processes as random variables. Only when information is stationary is the time series possible (Brockwell, 2011).

3.8.5 Serial Autocorrelation

It has been eluded that it is a common practice to treat the term serial correlation and autocorrelation simultaneously (Gujarati, 2013). However, for the purpose of this thesis, (Kendall and Buckland 1971) definition of autocorrelation is adopted. According to them, autocorrelation refers to "correlation between members of a series of observations ordered in time (time series) or space (cross-sectional data)". The implication of this is that the OLS estimators determined in presence of autocorrelation normally provide smaller standard errors than what is appropriately leading to misleading results of hypothesis testing. Also, the R-squared (coefficient of determination) value is deceptively large (Torres-Reyna, 2007).

The classical linear regression (CLRM) assumption is that, over time of zero, the error terms have covariances, which are unconnected errors. If the errors are not identical, they are auto-related or serially associated. Although objective, the coefficient estimates obtained from the OLS can be defined as inefficient because they do not provide the best BLUE. Therefore, a test of this supposition had to be carried out, and

while Durbin-Watson (DW) is the easiest statistical method of autocorrelation, it has a drawback because it is a test for a first-order association, which is, it checks for a relation to an error and to its immediate preceding (tests whether successive errors are related) and therefore cannot be extended. In this way, the model Breusch-Godfrey is used to calculate self-correlation through general up to the rhythm of a joint test which allows the association between the errors in time (μt) and several of their lagged values to be tested simultaneously (all at one time). Standard deviations can be prejudiced and the tests are less effectively obtained by the serial correlation or autocorrelation check-in a linear panel (Drukker, 2003). For this function, the Wooldridge self-correlation test was used in panel results.

3.8.6 Fixed and random effect (Hausman Tests)

Panel data models are often computed by either fixed-effects or random-effects methods. In the first case, the subject-specific effect is a random variable that is granted to be linked with the explanatory variables. The reasoning in the random-effects model is that, compared to the fixed-effects, the subject-specific effect is a random variable that is uncorrelated with the independent variables incorporated into the study model.

The fixed-effects model is a suitable specification if we are emphasizing a particular group of N companies and its deduction is limited to the conduct of these groups (Baltagi, 2005). The quandary of choosing the most appropriate model (fixed or random effect) was overcome by performing the Hausman test to find which of these models was the most appropriate. Hausman test (Hausman, 1978) was used for the choice of random effect over fixed effect estimators for the panel data analysis. Elucidation of findings was done bearing in mind a 5% level of significance.

3.9 Model Specification

The present study used hierarchical regression models to test the direct effect of intellectual capital elements on firm financial performance and the moderating effect of CEO tenure. The investigation models were as follows:

$$FP_{it} = \beta_{0it} + \beta_{1it}SIZE_{it} + \beta_{2it}AGE_{it} + \beta_{3it}IND_{it} + \varepsilon \quad \ldots\ldots 1$$

$$FP_{it} = \beta_{0it} + \beta_{1it}SIZE_{it} + \beta_{2it}AGE_{it} + \beta_{3it}IND_{it} + \beta_{4it}HC_{it} + \beta_{5it}SC_{it} + \beta_{6it}CE_{it} + \beta_{7it}INVC_{it} + \beta_{10it}CT_{it} + \varepsilon \quad \ldots\ldots 2$$

$$FP_{it} = \beta_{0it} + \beta_{1it}SIZE_{it} + \beta_{2it}AGE_{it} + \beta_{3it}IND_{it} + \beta_{4it}HC_{it} + \beta_{5it}SC_{it} + \beta_{6it}CE_{it} + \beta_{7it}INVC_{it} + \beta_{10it}CT_{it} + \beta_{11it}HC_{it} * CT_{it} \ \varepsilon \quad \ldots\ldots 3$$

$$FP_{it} = \beta_{0it} + \beta_{1it}SIZE_{it} + \beta_{2it}AGE_{it} + \beta_{3it}IND_{it} + \beta_{4it}HC_{it} + \beta_{5it}SC_{it} + \beta_{6it}CE_{it} + \beta_{7it}INVC_{it} + \beta_{10it}CT_{it} + \beta_{11it}HC_{it} * CT_{it} + +\beta_{12it}SC_{it} * CT_{it} + \varepsilon \quad \ldots\ldots 4$$

$$FP_{it} = \beta_{0it} + \beta_{1it}SIZE_{it} + \beta_{2it}AGE_{it} + \beta_{3it}IND_{it} + \beta_{4it}HC_{it} + \beta_{5it}SC_{it} + \beta_{6it}CE_{it} + \beta_{7it}INVC_{it} + \beta_{10it}CT_{it} + \beta_{11it}HC_{it} * CT_{it} + +\beta_{12it}SC_{it} * CT_{it} + \beta_{13it}CE_{it} * CT_{it} + \varepsilon \quad \ldots\ldots 5$$

$$FP_{it} = \beta_{0it} + \beta_{1it}SIZE_{it} + \beta_{2it}AGE_{it} + \beta_{3it}IND_{it} + \beta_{4it}HC_{it} + \beta_{5it}SC_{it} + \beta_{6it}CE_{it} + \beta_{7it}INVC_{it} + \beta_{10it}CT_{it} + \beta_{11it}HC_{it} * CT_{it} + +\beta_{12it}SC_{it} * CT_{it} + \beta_{13it}CE_{it} * CT_{it} + \beta_{14it}INVC_{it} * CT_{it} + \varepsilon \quad \ldots\ldots 6$$

$$FP_{it} = \beta_{0it} + \beta_{1it}SIZE_{it} + \beta_{2it}AGE_{it} + \beta_{3it}IND_{it} + \beta_{4it}HC_{it} + \beta_{5it}SC_{it} + \beta_{6it}CE_{it} + \beta_{7it}INVC_{it} + \beta_{10it}CT_{it} + \beta_{11it}HC_{it} * CT_{it} + +\beta_{12it}SC_{it} * CT_{it} + \beta_{13it}CE_{it} * CT_{it} + \beta_{14it}INVC_{it} * CT_{it} + \beta_{15it}IC_{it} * CT_{it} + \varepsilon \quad \ldots\ldots 7$$

Where:

FP_{it} is dependent variable (firm performance as measured by Tobin's Q ratio)

HC_{it}= human capital of firm *i* at time *t.*

SC_{it}= structural capital of firm *i* at time *t.*

CE_{it}= capital employed of firm *i* at time *t.*

$INEC_{it}$= innovation capital of firm *i* at time *t*

$VAIC_{it}/IC_{it}$= Intellectual capital components

CT_{it}= CEO tenure of firm *i* at time *t.*

$FSize_{it}$= firm size of firm *i* at time *t.*

$FAge_{it}$=Firm age of firm *i* at time *t*.

IND_{it}= Industry of sector *i* at time *t.* of firm *i* at time *t.*

β_{0i}= *y*–intercept of firm *i.*

ε_{it} = error term error term of firm *i* at time *t.* (random variation due to other unmeasured factors).

3.10 Robustness Tests

For valid causal inference, robustness is important, such that the coefficients of the essential core variables should, under suitable circumstances, be insensitive to adding or dropping variables. The robust diagnostic regression analysis, as classical regression analysis, is not only able to provide a solution to these needs but also enables the detection of observations or clusters of units (outliers) with unique characteristics that may help investigate the impact of IC dimensions on organizational financial performance moderated by CEO tenure.

Endogeneity limits the use of static OLS or FE estimators (due to simultaneity and unnoticed heterogeneity) since these estimators yield skewed results (Wintoki et al.,

2012). According to Arrelano and Bond (1991), Blundell and Bond (1998) suggested a GMM (SGMM) method that, in addition to a differentiated equation, can use a level equation to improve the efficiency of the results, particularly in data with a smaller time dimension. When the variables in levels are weak instruments for the first-difference equation, SGMM is also an effective estimator.

A Hausman-test specification model was utilized in the present research for a formal robustness test. It augmented this with nonlinearity and homogeneity diagnostics that can assist in determining whether the rejection of the robustness test happens or finding invalid covariate sets.

CHAPTER FOUR
DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.0. Introduction

The study's primary goal was to comprehend, demonstrate, and evaluate the effects of intellectual capital on financial performance moderated by CEO tenure. The study adopted an explanatory method to achieve the research objective and answered the study hypothesis herein based on the statistical model developed in the methodology chapter.

Data were subjected to diagnostic tests for the assumptions of specified inferential statistical analysis techniques and data quality considerations before testing hypotheses and inferential analyses (Gujarati, 2004). Further, the and results were presented graphically showing improvement-sample statistics. This section summarizes the results of random effects (RE) and Fixed-Effects (FE) estimations. The chapter is organized as follows: Section 4.1 discusses the descriptive statistics of the dependent and independent variables. Section 4.2 discusses the diagnostic tests such as multicollinearity and unit root test, and OLS results followed by FE estimations. Section 4.3 presents advanced diagnostic test results such as heteroscedasticity and autocorrelation to check the reliability of the OLS and FE estimates. Section 4.4 explains the problems in the OLS and FE estimates and discusses possible solutions. Section 4.5 summarizes the chapter.

4.1 Descriptive Statistics

Table 4.1 summarizes, with a total of 576 observations, the descriptive statistics of the dependent and independent variables for the 48 firms in the NSE between 2006 and 2017. The table shows the mean, average, maximum, standard deviation, skewness,

kurtosis, and the number of dependent and independent variables observations. The thumb principle is that if a variable has values between -1.0 and+ 1.0 as suggested by its skewness and kurtosis, it is fairly close to normal (Dancey, 2004). The above results show distorting statistics, as advocated by Dancey, for all independent and dependent variables were between + /-1 limits. This implies that the distribution of efficiency on average replicates the distribution of probability in human capital, structural capital, capital employed, and innovation capital. Essentially utilizing conventional normal standard rate squares and post-estimation diagnostic tests involving data normality is therefore feasible.

Table 4. 1: Descriptive Statistics

	Total penal observations	Mean	Sd	Max	Min	Skewness	Kurtosis
Tobin Q	576	1.67	0.88	4.42	1.33	1.89	1.80
HCE	576	11.57	11.60	75.33	-35.66	1.77	2.19
SCE	576	1.51	5.90	74.33	-0.13	-1.23	2.32
CEE	576	16.89	19.23	120.05	-55.66	2.05	3.32
INCE	576	2.93	4.57	25.89	0.27	-0.75	-0.06
VAIC	576	6.90	20.79	8.72	-129.41	0.99	2.23
CT	576	4.10	2.03	12.00	1.00	0.15	2.36
IND	576	5.78	3.34	1.00	0.00	0.11	1.73
FSize	576	6.17	0.92	8.89	4.10	-0.52	7.12
FAge	576	55.50	32.56	165.00	14.00	0.83	2.16

Source: Research data (2018)

As can be seen in Table 4.1 above, the mean values of all variables range from a minimum of -129.41 for VAIC as measured by the significance-added ratio of the Intellectual capital components to a maximum of 165.00 for the firm age as measured by the firm's period to the current year. Over the period under study, the mean of VAIC achieved value greater than one. It means that a sample of enterprises creates

value. The minimum and maximum Tobin's Q of companies listed in the Nairobi Security Exchange were 1.33 and 4.42 respectively. The table also indicates that the mean value for the dependent Tobin's Q variable is 1.67, suggesting greater efficiency than average.

The standard deviation from either the dependent Tobin's Q variable is 0.88, indicating that economic performance volatility varies only by 88 percent from the median. Human capital was the highest enhancing value of intellectual capital. The mean value of variables in economic performance suggests the general financial soundness of Kenya's NSE market. Tobin's Q can measure long-term performance (Wang and Gao, 2014) anticipated. Tobin's Q is a comprehensive analysis of the company's assets and a strong method to reflect the competitive strengths of the firm; it could also reveal the earnings achieved from the investment (Aramburu, & Saenz, 2011).

The average value of 16.89 capital employed efficiency illustrates the high quality of the NSE's financial assets. In relation, being a high-profile NSE, employed capital has been a major contributor to NSE performance overall excellence. Concerning the independent variables, the mean value suggested by CCE is more effective in wealth creation during the study period than HCE, INCE, and SCE. However, if the components are examined individually, it is evident that the efficiency in capital employed (mean= 16.89) is more efficient compared to the human capital efficiency (mean 11.57), innovation capital efficiency (mean= 2.93), and structural capital (mean= 1.51). The findings reveal that listed firms invest significantly in their financial assets and human capital to exploit the knowledge and skill of their employees to improve their overall performance.

4.2 Data Diagnosis

Some fundamental diagnostic tests on the data set were performed before applying the OLS estimator. These tests were analogous to the Classical Linear Regression Model (CLRM) multiple assumptions. The following research parameters were tested: outliers, normality, linearity, homoscedasticity, multi-linearity, residual freedom. The results of the study most certainly give partial estimates of the parameters when these assumptions are broken (Saunders, Lewis and Thornhill, 2007).

4.2.1 Results of Outliers

An occurrence that is far removed from the general pattern in which parameters are measured and far removed from the row that was installed is an outlier (Creswell, 2003). Mahalanobis d-square analysis observed the presence of outliers. Since observed outliers, fair boxplots were taken to indicate that variables were usually scattered before the study was carried out.

4.2.2 Normality Test Results of Dependent Variable

When deciding which matrix of correlation to apply, it is essential to scrutinize the normality of data. The assumption of normality is also crucial for conducting single or joint hypothesis tests about model parameters, according to (Brooks, 2014). The study analysis of OLS included the probability distribution of errors between observed and predicted values (i.e., residual coefficient). Use a histogram or Q-Q chart to check this hypothesis in Figure 4.1 in (Appendix IV). The tests of Kolmogorov-Smirnov and Shapiro-Wilk were carried out to test the normality of the dependent variable financial performance proxy by Tobin's Q. This was important to define the appropriate tests to be done and not contradict normal distribution rules (Math-Statistics-Tutor, 2010). This was necessary. The Kolmogorov-Smirnov and Shapiro-Wilk standard tests were used to detect all variances from normality (Math-Statistics-Tutor, 2010).

When the p-value is 0.05 or below (Sharpiro and Wilk, 1965), these statistics would lead to rejection of the normality hypothesis. Table 4.2 reveals that the figures were 0.200 and 0.485, respectively, for Kolmogorov-Smirnov. Because p-values are higher than significance levels (0.05), at p<.05, implies they were insignificant, this means that variables are normally distributed. The likelihood of a skewed value of 0.6064 indicates that skewing is usually distributed asymptotically (p-value skewing > 0.05). Similarly, Pr (Kurtosis) concerns an asymptotic variation of kurtosis (kurtosis p-value > 0.05). Besides, chi (2) is 1.23, which was higher than 0.05, indicating the significance of at 5 percent level. Therefore, residual values also indicated normal distribution for normality according to the Skewness test.

Table 4. 2: Normality Test Results (Kolmogorov-Smirnova) for Dependent Variable

Test	Obs	Pr(Skewness)	Pr(Kurtosis)	adj	chi2(2)	Prob>chi 2
Skewness/ Kurtosis Kolmogorov-Smirnov[a]	576	0.6064	0.3265		1.23	0.5399
Test	**Obs**	**W**	**V**	**z**	**Prob>z**	
Kolmogorov-Smirnov[a]	576	0.99597	1.647	1.105	0 .200	

Figures 4.1 and 4.2 in (Appendix IV) demonstrate the visualized distribution of random variables that vary from the predicted distribution to the actual division of financial performance. The figures show a small deviation from normality. The distribution was therefore normally distributed in general. For Kolmogorov-Smirnov, based on the measured valid test data

4.2.3 Linearity Results

Linearity means that the amount of adjustment or the exchange rate is consistent across the whole spectrum of scores for variables and scores on two sets of variables

(Bai & Perron, 2008). To confirm the actual strength of all relationships, the linearity test was necessary. The linearity assumptions for all Tobin's Q models were met in Appendices Fig 4.1 and Fig 4.2. If a linear model encompasses non-linear data (linearity violations), predictions are likely to be gravely mistaken (Hansen, 2009). Removing outliers addresses the problem of linearity (Hansen, 2009). The study hypothesized the linearity among variables due to the dropping of outliers. The histogram provides additional confirmation that the distribution of data fits reasonably well within the normal curve. The Standard Probability diagram also reveals that most observations were taken from the bottom left to the upper right on the straight line. This also means that there was no direct violation of the assumption.

4.2.4 Homoscedasticity of the Residuals of Dependent Variable

The analysis was carried out on the homoscedasticity of the company's current financial performance. OLS claims that the error word (Homoscedastic) is continuously distinct. If the error parameters are not consistently equal (the variances are different), they are said to be heteroscedastic. Violation of this law does damage to study outcomes and confidence levels. Levene Statistics was used to test the null hypotheses of variance homogeneity, i.e. all error variances are equal or homogeneous. Table 4.3 shows 4.642 Leven's p-value= 0.000 associated figures. Since the Levene Statistics likelihood was 0.000, which is below 0.05, the analysis did not dismiss the null hypothesis and considered the dependent variable variance to be homogeneous.

Table 4. 3: Test of Homogeneity of Variances

Levene Statistic	df1	df2	P-value
4.642	12	546	.000

Likewise, the null hypotheses that heteroscedasticity was not present (Homoscedastic) when significant-value is less than 0.05 were checked using Breusch-Pagan and Koenker test statistics to refute the null hypothesis. The Breusch-Pagan experiment is a large sample check which suggests that the residual items are handled normally. Table 4.4 revealed figures of 12.757 for Breusch-Pagan and Koenker with a corresponding p-value of=.000. Because the chance of 0,000 was less than 0,05 for the Breusch-Pagan and Koenker studies, the analysis dismissed the null statement and assumed that the variation of the dependent variable was homogenous.

Table 4. 4: Breusch-Pagan and Koenker Test for Heteroskedasticity

	SS	**df**	**MS**	**F**	**Sig**
Model	12.757	4.000	3.189	1.088	.000
Residual	416.364	572.000	2.932	-999.000	-999.000

4.2.5 Multicollinearity Results

A multi-linearity analysis was carried out to check the relationship between variables. Multicollinearity is a statistical anomaly with a high correlation between two or more predictor variables in a multiple regression system. It happens when two or more of the independent variables have a linear relation in one version of the formula (Gujarat & Porter, 2009).

The measured regression coefficients fluctuate significantly and become less stable in a multifaceted regression analysis with the degree of association between independent

variables (Kothari 2005). Multicollinearity also raises Standard β coefficients, suggesting that the β variance between specimens is comparatively greater and it is therefore difficult to assess individual importance of the predictor.

To order to identify sensitivity and inflation factor (VIF) (Cooper & Schindler, 2011), a procedure of multi-collinearity analysis has been used. The threshold of (O'Brien, 2007) has been less than 0.20 and a VIF 5 or 10 beyond indicates multi-collinearity problems. High sensitivity and higher VIFs indicate multi-coordinateness (Hair, Anderson, Tatham & Black's, 1998). Table 4.5 revealed that the research variables ' values were less than 5, while Tolerance was greater than 0.2 and indicates no multicollinearity among the predicted variables, for the analysis variables Variance Inflation Factor (VIF).

Table 4. 5: Coefficient for Tolerance and Variance Inflation Factor Tests

	Collinearity Statistics	
Variables	**Tolerance**	**VIF**
Human capital	.707	1.414
Structural capital	.647	1.545
Capital employed	.7930	1.261
Innovation capital	.7463	1.340
Intellectual capital	.796	1.123
Industry	.6461	1.55
Firm Age	.7024	1.42
Firm size	.7259	1.38
CEO tenure	.792	1.345
Mean VIF and Tolerance	**.773**	**1.315**

a. Dependent Variables: Financial Performance

4.2.6 Independence of Residuals or autocorrelation test

The OLS assumes there is no autocorrelation in the disturbance term. In other instances, one observation's error term is not influenced by the error term of the other observation. However, (Gujarati, 2012) emphasizes that this hypothesis can be very restrictive in cross-sectional data, particularly in economics and finance, where shocks

in the modern age could affect the coming periods. This study adopted both Durbin – Watson and Wooldridge to spot the presence of autocorrelation in residents from a regression analysis (Chatterjee *et al*., 2013). Such studies include some classification assumptions, such as individual effect types, need for non-stochastic regressors, and failure to work in the regression analysis.

If they are not, autocorrelation makes predictors appear significant. The Durbin-Watson statistic value for the acceptable range is between 0 and 4 and 1.5-2.5 (Gujarati and Porter, 2009). Values of 2 indicate that the sample does not have autocorrelation (Verbeek, 2012). Table 5 displays an appropriate array of Durbin–Watson 2.048 statistics which is within the acceptable range. It indicates that there is no autocorrelation in the sample, and separate errors have been detected in the residuals. Drukker (2003) further argued that the autocorrelation test of Wooldridge (2002) had no such limitations and was able to manage the balanced panel data with and without observation gaps. The null hypothesis cannot be dismissed by the p-values at the sense level of 5%. This shows that that there is no autocorrelation in the sample, hence the residuals were found to have independent errors. Drukker (2003) further argues that Wooldridge's autocorrelation test (2002) had no such limitations and is capable of managing unbalanced panel data with and without observation gaps. The null hypothesis cannot be rejected at the significance level of 5 percent by the p-values in table 4.6, implying that there is no autocorrelation in the data.

Table 4. 6: The Wooldridge and Durbin–Watson Tests for Autocorrelation

Wooldridge test for autocorrelation in panel data					
Ho: no first-order autocorrelation					
F (1, 48)					3.622
Prob > F					0.0614
Durbin–Watson	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson statistics
	.673[a]	.453	.436	.45462	2.048

Also used for visualizing the distribution of the metabolites was the statistical method of measuring the residual freedom. Figure 4.3 (Annex IV) shows that residuals are scattered and oscillated about zero, with no distributed sequence, as they have positive as well as negative ends. It showed that the residual was either not independent, whether positive or negative.

4.2.7 Unit root test

Even though in the recent past, checking the stationarity of panel data has become essential (Maddala & Wu, 1999). Stationarity testing ensures the mean and variance of variables are also not moment-dependent. In the field of economics and finance, time-related or seasonal shocks in a given era could have a strong effect on subsequent periods; one essential assumption of CLRM is that current variables' values should be independent of their original values. Among the various unit root panel data tests such as the Lavin-Lin test and the IM-Pesara-Shin test, etc., the only root panel data unit test that incorporates unbalanced panel data is the Fisher-Type p test. This test also allows different lag lengths in the individual Augmented Dickey-Fuller test

This current study applies both the Fisher-Type and Modified Fisher-Type tests to test the unbalanced panel data for stationarity. These tests ' null hypothesis is that the panels have a unit root. Looking at the p-values in Table 4.7, the null hypothesis can be rejected for all the study variables at all conventional significance levels, implying that this study statistics didn't have a unit root. This means that either the means or variances in our data are not time-dependent; too OLS application can produce significant effects (Gujarati, 2012).

Table 4. 7: Unit Root Test

		Inverse chi-squared (134) P	**Inverse normal Z**	**Inverse logit t (339) L***	**Modified inv. chi-squared Pm**
Tobin Q	Statistic	671.955	-16.991	-22.122	32.861
	p-value	0.000	0.000	0.000	0.000
INCE	Statistic	591.837	-13.289	-18.605	27.967
	p-value	0.000	0.000	0.000	0.000
SCE	Statistic	754.882	-18.356	-24.776	37.926
	p-value	0.000	0.000	0.000	0.000
CEE	Statistic	716.867	-17.6249	-23.4951	35.604
	p-value	0.000	0.000	0.000	0.000
HCE	Statistic	716.867	-17.625	7-23.4951	35.604
	p-value	0.000	0.000	0.000	0.000
CEO tenure	Statistic	716.867	-17.625	-23.495	35.604
	p-value	0.000	0.000	0.000	0.000
Firm Size	Statistic	438.240	-11.018	-13.559	18.584
	p-value	0.000	0.000	0.000	0.000
Firm age	Statistic	479.542	-4.865	-13.199	21.107
	p-value	0.000	0.000	0.000	0.000
Firm industry	Statistic	8.924	0.594	0.556	-7.640
	p-value	0.000	0.000	0.000	0.000

Source; (Field data, 2018)

As a final result, the assumptions for using multiple regressions such as multicollinearity, normality, linearity, homoscedasticity, independence of errors, and Unit root test have been checked and demonstrated that they are not violated.

4.3 Testing for Fixed Effects or Random Effect

Both fixed and random effects were used to test the hypothesis and Hausman tests were used to determine which model was superior to investigate the study hypothesis. In the specification for fixed effects, R squared was 0.2603 that also implies that intellectual capital contributes to 26.03% of economic performance.

Table 4.8 findings showed that innovation capital efficiency would have a beneficial and significant impact on financial performance (β= 0.104, ρ <0.05). In specific, an increase of 0.104 units in innovation capital efficiency leads to an increase with the same unit in significant economic results. The t-value= 2.90 which implies it's more than the recommended error. In general, the influence of structural capital efficiency on significant economic performance was small (β=020, ρ >0.05). In addition, the efficiency in capital employed would have a favourable and significant effect on the financial outcomes of the firm (β=0.084, ρ <0.05). This is a clear indication that significant financial performance increase by 0.084 percent once the efficiency of capital employed is enhanced by one unit. The t-value= 2.79 demonstrating that the associated standard error is more than that. Additionally, the effectiveness of human capital has also had a positive and significant effect on the financial performance of the firm (β=0.135, ρ <0.05). In specific, an increase throughout the efficiency of human capital by 0.135 units leads to an increase in firm financial performance by the same unit. The t-value = 2.90 which implies that it is less than the standard error. However, firm size (β= -0.461, ρ>0.05) and firm age (β= 0.032, ρ>0.05) had no significant effect on firm financial performance. Therefore, there is no change in firm financial performance with an increase in firm size and industry by one unit.

Table 4. 8: Fixed model

Fixed-effects (within) regression		Number of obs =	576
Group variable: firm		Number of groups =	48
R-sq: within =	0.2475	Obs per group: min =	12
R-sq: between =	0.2417	avg =	12.0
R-sq: overall =	0.2603	max =	12
		F (8,520) =	11.25
Corr(u_i, Xb) =	-0.0430	Prob > F =	0.0000

Tobin's Q	**Coef.**	**Std. Err.**	**t**	**P>t**	**[95% Conf. Interval]**	
Constant	.9415317	.3244437	2.90	0.004	.3041502	1.578913
HCE	.1349683	.0422113	3.20	0.001	.0520427	.2178939
SCE	.020228	.0200501	1.01	0.314	-.0191613	.0596172
CEE	.0838386	.0300701	2.79	0.005	.0247649	.1429123
INCE	.1035613	.0237505	4.36	0.000	.0569025	.1502201
VAIC	-.3112683	.2625089	2.52	0.000	-1.80430	0.88149
CT	3.070328	1.120501	0.01	1.014	2.010161	1.059017
Industry	-.4212783	.3125198	2.39	0.006	-2.104306	1.091493
Firm size	-.4612783	.3325098	-1.39	0.166	-1.114506	.1919493
Firm age	.0320596	.0875567	0.37	0.714	-.1399487	.2040678
sigma_u	.86065821					
sigma_e	.39884283					
rho	.82321165	(fraction of variance due to u_i)				

F test that all u_i=0: F (46, 520) = 24.79 Prob > F = 0.0000

4.3.1 Random effect

The study used a random variable to evaluate the effect of intellectual capital on financial performance. In a model of random effects, it is assumed that the non-observed variables are uncorrelated with (or, more strongly, statistically independent variables) all the observed variables.

That assumption is often erroneous and misleading, however, for the aforementioned reasons (e.g., standard errors with fixed effects can be very high, RE allows for the estimation of the effects of time-invariant variables), a RE model may still be desirable under certain circumstances. Using Generalized Least Squares (GLS), RE models can be calculated. R Squared was 0.5065 from the RE model, indicating that the intellectual capital components ((human capital, structural capital, capital employed, and innovation capital) explains 50.65% variation in the financial

performance of listed firms in Nairobi securities. As the model revealed the remaining 49.35 % of the variability was not explained in this model. Wald's chi-square results indicate prob > $\chi 2 = 0.000$ that model was significant.

Results revealed that human capital ($\beta 1 = 0.064$, $p>0.05$) and structural capital ($\beta 4 = 0.030$, $p>0.05$) only have a marginal impact on NSE firms ' financial performance. The findings on capital employed ($\beta 2 = 0.137$, $p<0.05$) and Innovation capital ($\beta 3 = 0.102$, $p<0.05$) had a significant effect on organizational financial performance. It implied an increase in the firm financial performance of up to 0.137 units for each unit of capital employed and an increase in the firm financial performance of up to 0.102 units for each unit of innovation capital. The control variables affect findings showed that the industry had a positive effect on the financial performance of the publicly traded companies ($\beta = -0.540$, $p>0.05$), while the firm size was ($\beta = -0.186$, $\rho>0.05$) and firm age ($\beta = -0.07$, $p>0.05$) which no significant effect on firm's financial performance.

Table 4. 9: Random effect

Random-effects GLS regression	Number of obs = 576
Group variable: firm	Number of groups = 48
R-sq: within = 0.5332	Obs per group: min = 12
R-sq: between = 0.5470	avg = 12.0
R-sq: overall = 0.5065	max = 12
	Wald $\chi^2(9)$ = 111.97
corr(u_i, X) = 0 (assumed)	Prob > χ_2 = 0.0000

Tobin's Q	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
Constant	1.046697	.3527195	2.97	0.003	.3553793	1.738015
HCE	.0645668	.0411294	1.57	0.116	-.0160453	.145179
CEE	.1369476	.0294213	4.65	0.000	.0792828	.194612
INCE	.1023792	.02415	4.24	0.000	.0550462	.149712
SCE	.0304559	.0204509	1.49	0.136	-.009627	.070539
VAIC	.162358	.017890	3.06	0.000	.045078	.176945
CT	.002379	1.02059	2.04	0.000	.0560462	.138612
Industry	-.5396242	.1771065	-3.05	0.002	-.8867466	-.192502
Firm size	-.1864135	.3375723	-0.55	0.581	-.848043	.4752161
Firm age	-.0074739	.082397	-0.09	0.928	-.1689692	.1540213
sigma_u	.5503982					
sigma_e	.39884283					
rho	.65569079	(fraction of variance due to u_i)				

4.3.2 Hausman test

In testing the hypothesis between both fixed and random effects, a Hausman test we undertaken where the null hypothesis of one of the compared models gave consistent and efficient results and the other gave consistent, but inefficient results, and at the same time under the alternative hypothesis the first model gave inconsistent results and the second gives consistent results (Green, 2008). It basically tests the relationship between the two distinctive errors (u I and the regressors; the null hypothesis is that they are not. As also stated by (Piratheepan and Banda, 2016), the Hausman test simply refers to the difference in the coefficient in performance in fixed effects and random effects (Baltagi, 2005)

Baltagi (2005) suggested that there are two constraints in the Hausman test, require strict homogeneity and assume that both idiosyncratic error and non-observed impacts are continuous. The Hausman test result proof Prob > Chi2= 0.000. Therefore, H0 hypothesis claims can be formulated that there is a random effect H1 hypothesis states that there is no random effect. With the Hausman test result proof Prob > Chi2= 0.000. H0 hypothesis was to be discarded with 5 percent of the significance level. Table 4.10 displays the effects of the model collection summarized.

Table 4. 10: Hausman test.

	(b) **Fe**	**(B)** **Re**	**(b-B)** **Difference**	**sqrt(diag(V_b-V_B))** **S.E.**
HCE	0.134968	0.064567	0.070402	0.003
CEE	0.020228	0.136948	-0.11672	0.122
INCE	0.083839	0.102379	-0.01854	0.002
SCE	0.103561	0.030456	0.073105	0.007
VAIC	0.010230	0.12605	-0.0687	0.0768
CT	-0.06128	-0.00296	0.06734	0.046
Industry	-0.46128	-0.53962	0.078346	0.053
Firm size	0.03206	-0.18641	0.218473	0.014
Firm age	-	-0.00747	0.007474	-
chi2(7) = (b-B)'[(V_b-V_B) ^(-1)](b-B)		*8.52*		
Prob>chi2		*0.2893*		

The column labeled (b) represents the estimated coefficients of both the fixed effects model from the findings presented in Table 4.9, while the one labeled (B) represents the estimated coefficients of both the random-effects model. From the Hausman test Table 4.9 displaying a summary of the results, the inference is that the null hypothesis of "difference in non-systematic coefficients" to determinants of firm financial performance is not rejected. This was because there was no significant chi-square value of 8.52, p-value= 0.2893. This, therefore, implies that the random effect model was used to test the effect of hypotheses. This implies the random effect is the most

appropriate model. Random effects models have an important advantage over fixed-effects models because they take into account the variation between observations in addition to the variation within observations of individuals.

4.4 Correlation results

Assessment of correlation is a means of measuring relationships between variables and causes. Pearson r is the most commonly used form of a correlation coefficient, often considered as a linear or product-moment correlation. The correlation coefficient is always between-1 and+ 1. A+ 1 coefficient of correlation indicates that the two variables are strongly related; while a-1 coefficient of correlation shows that two variables are perfectly related in a negative linear sense. On the other hand, a coefficient of correlation of 0 suggests that there is no linear relationship between two variables (Gujarati, 2004). The value of the correlation coefficient varying from +1 to -1 according to (Pallant,2011).

Table 4. 11: Correlation results

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	**Tobin's Q**	1.0000														
2	**HCE**	.5065**	1.0000													
3	**CEE**	.2383*	0.4651*	1.0000												
4	**INCE**	.1481*	0.4939*	0.2148*	1.0000											
5	**SCE**	.0196	0.1654**	-0.0531	0.0011	1.0000										
6	**VAIC**	.1816**	0.7040*	0.4443**	0.3217*	0.0938*	1.0000									
7	**CEO Tenure**	.2179*	-0.0396	0.1263*	0.0040	-0.0206	-0.0027	1.0000								
8	**HCE*CT**	. 2296*	0.6861**	0.4329*	0.3941*	-0.0267	0.4775*	0.3851*	1.0000							
9	**SCE*CT**	.1036*	0.3642*	0.7850*	0.1560*	-0.0860*	0.3725**	0.0387	0.4627*	1.0000						
10	**CEE*CT**	. 5068**	-0.0159	0.1156*	0.3974**	0.0069	0.0068	0.4045**	0.1417*	0.1587*	1.0000					
11	**INCE*CT**	-.1352	-0.0262	-0.1929*	-0.0621	0.7224**	-0.0797	-0.3053*	-0.2831*	-0.2262*	-0.0768	1.0000				
12	**VAIC*CT**	.3383**	0.2240**	0.3291**	0.1983*	0.1618**	0.2208*	0.8670*	0.5849*	0.3046*	0.4652*	-0.1277	1.0000			
13	**Industry**	-.3165*	-0.1386*	-0.4659*	-0.1062*	0.0142	-0.1714*	-0.0673	-0.0883*	-0.3702*	-0.1198*	0.0135	-0.1791*	1.0000		
14	**Firm size**	-.2476**	0.0751	-0.4347*	0.1662*	-0.0469	-0.0607	0.0214	0.1183*	-0.3145*	0.0583	-0.0417	-0.0271	0.0927*	1.0000	
15	**Firm age**	-.1507*	-0.2109*	-0.2618*	-0.1869*	-0.0213	-0.2171*	-0.1155*	-0.1655*	-0.2727*	-0.1938*	0.0910*	-0.2133*	0.4526*	-0.0590	1.0000

Correlation is significant at *0.05 level;0.01**; N=576. **Source: Research Data, (2018)**

Pearson moment correlation was used, depending on the level of measurement, to describe the relationship between independent and dependent variables. The findings of the Pearson correlation in Table 4.11 showed that the financial performance and human capital had a positive association as evidenced by a coefficient of $r = 0.5065$ which was also significant at $p< 0.05$. The output also shows that structural capital efficiency was positively related to financial performance, with a coefficient of $r = 0.0196$ which was equally significant at $p< 0.05$. Structural capital tended to have a lower influence on the financial performance of the firms than that of human capital. The correlation results also indicated that the efficiency of capital employed was positively related to financial performance as demonstrated by a coefficient of $r=0.2383$ significant at $p < 0.05$. It indicates that an improvement in physical capital's value-creation capacity would impact the financial performance of the Nairobi Security Exchange. Furthermore, Innovation capital efficiency was also positively related to financial performance with a coefficient of r=1481 of Pearson Correlation, which is significant at $p<0.05$. Besides, CEO tenure shows a positive correlation with financial performance as shown by the coefficient of r=0.2179 of Pearson Correlation which is significant at $p<0.05$.

The findings show that capital employed appears as the most important component of intellectual capital accounting in influencing the financial performance of publicly traded firms in NSE. Capital employed is virtually a critical component of intellectual capital as a source of superior financial performance. This is in inconsistency with previous studies by (Bontis, 1998; Stewart, 1997; Edvinson & Malone, 1997) that ranked human capital as the highest and structural capital as second contributors to business performance respectively.

Table 4. 11 illustrates the Pearson correlation results which aimed to determine the relationship amongst the IC variables and corporate performance, thus recognize its direction, either positive or negative relationship. The finding shows that there is a significant positive relationship between HCE*CT and firm financial performance ($r = 0.2296$, $p < 0.05$), SCE*CT and firm financial performance ($r = 0.1036$, $p < 0.01$), CEE*CT and firm financial performance ($r = 0.5068$, $p < 0.05$) INCE*CT and firm financial performance ($r = -0.1352$, $p < 0.05$) whereas VAIC*CT and firm financial performance ($r = 0.3383$, $p < 0.01$).

Firm size was also negatively associated with financial performance, with an $r = -0.2476$ coefficient that is also important at $p<0.05$. Firm age had a negative correlation with financial performance based on the coefficient of $r = -0.1507$ of Pearson Correlation that is significant at $p<0.05$. In contrast, the industry sector has a negative correlation with a coefficient of $r = -0.3165$ in financial performance, which is significant at $p < 0.05$. From the above, INCE, SCE, CEE, HCEI, VAIC, CEO tenure, firm size, firm age, firm financial performance (Tobin's Q), and interaction between the predictor variables and the moderator all had a linear relationship. It offered more room for multiple regression analysis.

Findings also revealed that human capital has the strongest relationship with firm financial performance, followed by Capital employed, Innovation capital, and Value-added Intellectual Capital (VAIC). Structural capital was not statistically significant in short, the result indicates that IC is believed as important and strongly related to superior corporate performance.

4.5 Regression Results

The research study tested the relationship between intellectual capital components and financial performance using Tobin's Q in regression analysis as a proxy

4.5.1 Regression findings for direct effects

The control variables were regressed with Tobin's Q and secondly with a four-factor model like HCE, SCE, CCE, and INCE. The study applied another parameter to the second model (CEO tenure-CT) to assess the effects on the financial performance of the company in the third model. Models 1 to 10 introduced the interaction concept stepwise. The results of the regression are shown in Table 4. 12 on page 147.

Model 1 ran the three control variables and excludes IC components and the interaction variable in the model. The model had overall significance but its power to explain the total variation independent variable was at 26%.

Model 2 was designed to investigate the effect of moderating term, CEO tenure (CT) on financial performance. According to tests, CEO tenure has a significant influence on the dependent variable, and the model had overall significance with explanatory power R^2 of 37.3 % and it changes the model explanatory power by 11.3%. These results suggest that CEO tenure has a significant influence on structural capital efficiency, capital employed and innovation capital efficiency but no influence on human capital efficiency of companies listed on NSE in Kenya. The findings of this study confirm the results of Merika, Triantafyllou, Kalogeropoulou, and Kalokairinos (2016), who conducted research on the causal relationship between CEO tenure and firm financial performance in the shipping industry. Using general methods of moments of estimation on the cross-sectional data of 89 shipping companies mentioned in 2014, they revealed that the financial performance of a shipping company was a significant and positive effect on the shipping company’s financial performance. The study concluded that financial performance was enhanced as the CEO's tenure rises. In the same context, these results provided support for Dikolli *et al*.'(2011), findings which concluded that if shareholders see a financial gain, they

would retain the same CEO. Eventually, their control over him drops after an average of 4 years, and at the same time, the company experiences a financial boost along with a longer-term as CEO.

Simsek's (2007) study on CEO tenure and organizational performance: an intervention model discovered that CEO tenure influenced performance by influencing top management team risk-taking and pursuing entrepreneurial initiatives by the company. However, on the flip side, the findings of this study contradict that of Hambrick and Fukutomi, 1991 whose empirical study found that neither extremely short nor extremely long tenures make a significant contribution to a business ' financial performance. They concluded that if CEO tenures are very short, their performance is generally expected to be insufficient and not suit the corporate standards, this results in an increased commitment to an obsolete paradigm and more restricted information processing (Hambrick *et al*., 1993; Hambrick & Fukutomi, 1991), with extremely long CEO tenures in a dynamic environment. A changing world could be expected to create alertness; however, in this situation, a CEO is more likely to be stuck to a model that is no longer appropriate, resulting in performance losses. Lublin report (2010) found that underperforming CEOs will leave the market in the first three years. To order to see results, stockholders use the first three years. The planet is so dynamic, that change is inevitable. Organizations need a new mind, and that could be why they no longer hold office.

In Model 3, as in Model 1, four IC components were examined for the effects on Tobin's Q ratio along with three control variables, moderation term, and interaction effects HCE*CT. The independent variables had a significant positive effect on Tobin's Q ratio; the firm age and intercept were not significant, whereas the remaining control variables, moderation term, and interaction effects had significant effects on

the model. The model had overall significance and R^2 is about 36.8 percent, which for these models can be considered as high fitness. However, its explanatory power changed by -0.5% from model 3 to model 4. Model 5 is a four-variable model and it has almost the same results as Model 4. The model explanatory power changed by 0.3% from model 4 to model 5. The significance levels, R^2 (37.1%), and even the coefficients are almost equal.

In Model 4 the independent variables in this model affect significantly the Tobin's Q ratio and the model overall significance R^2 is (38.9%). Firm age one of the control variables and structural capital efficiency (SCE) an independent variable is statistically insignificant. The model explanatory power changed by 1.8% from model 3 to model 4.

These findings are similar to that of Berzkalne and Zelgalve (2014) who examined the relationship between intellectual capital as 142 independent variables and firm value as a dependent variable. This research was done on 64 (Estonia 29, Latvia 11 & Lithuania 24) companies listed on the Baltic in which data of 7 years (2005 to 2011) was used. A purposive sampling technique was followed for data collection from financial statements. Correlation analysis was used to examine the relationship. Tobin's Q was used to measure the firm value whereas; VAIC was used to measure the value of intellectual capital. A positive and significant relationship was concluded between intellectual capital and firm value in the companies of Lithuania and Latvia, whereas, no such relationship was not found in Estonia's companies.

Further, Nejati and Pirayesh (2015) also examined the effect of intellectual capital on firm value. By applying the systematic removal method, the study was conducted on 132 firms of Tehran stock exchange whose data was collected by the Tehran stock exchange organization covering 6 years starting from 2008 and ending in 2013. A

positive correlation was concluded between intellectual capital and firm value. It was also concluded that there was a significant relationship between capital Employed, structural capital & human capital efficiency, and the company's intellectual capital.

In Model 5, Human capital, capital employed, Innovation capital, the industry a control variable, the moderator, and interaction effects had significant effects on the model. The control variables firm age, firm size and structural capital were not significant. The model had overall significance and R^2 is about 37.1%. The model explanatory power changed by 0.3% from model 4 to model 5.

Model 6 output was similar to those of model 5, the model had overall significance and R^2 was 39.1%. The model explanatory power changed by 2% from model 5 to model 6. Model 7 exhibits an explanatory power of 39.6 % and the over model was statistically positive and significant. Most of the predictor variables were significant and statistically positive expect of SCE. One of the control variables was negative and significant, whereas two of the control variables were insignificant. The model explanatory power changed by 0.2% from model 6 to model 7.

4.5.2 Test of Hypotheses

Based on the findings in the Hausman test, the study will use a random effect to test hypotheses 1 to 8. The regressions of random effects are weighted between and within results. Random-effect models, though, have the downside of being incoherent if the variable values between and set are not the same on a system–when the model is unspecific.

Drawing from the study results in Table 4. 12 on page 147 **the** direct effects of specific IC dimensions on firm financial performance were discussed as provided below from page 133 to 138.

The first objective of the study sought to determine the effect of human capital on the financial performance of firms listed in the Nairobi Security Exchange. This was achieved by testing the following hypothesis:

Hypothesis 1($H0_1$) *stated that human capital has no significant effect on the financial performance of listed firms in the Nairobi Security Exchange.*

Findings showed that human capital had coefficients of the estimate which was significant basing on $\beta1 = 0.18$, p-value = 0.000 which is less than $\alpha = 0.05$). The null hypothesis was thus rejected and it was concluded that human capital has a significant effect on the financial performance of listed firms in NSE. This suggested that firm financial performance increased by 1 unit due to an increase in human capital by 0.18 units. The results of this study demonstrate that the relationship between Human capital and the financial performance of companies in NSE Kenya is significantly positive. The findings reinforced the relationship and suggested that the efficiency of human capital is a particularly important element of IC. Hence companies in Nairobi Security Exchange would greatly benefit from investing in the skills and knowledge of their workers.

The second objective of the study sought to determine the effect of human capital on the financial performance of firms listed in the Nairobi Security Exchange. This was achieved by testing the following hypothesis:

Hypothesis 2($H0_2$) *stated that structural capital has no significant effect on the financial performance of listed firms in the Nairobi Security Exchange.*

Findings showed that structural capital had estimate coefficients which were negligible based on $\beta2 = 0.12$, p-value = 0.541 which is higher than $\alpha = 0.05$), so it

was concluded that structural capital had no significant effect on firm financial performance. Thus, we failed to reject the null hypothesis and it was concluded that structural capital had no statistically significant effect on the financial performance of the listed firms in NSE. This was evidence of the low levels of structural capital efficiency among the firms listed in the Nairobi Security Exchange which could have limited the development of structural capital, such as internal elements of firms such as patents, software, trademarks, and copyrights. This means listed NSE firms with strong internal processes, internal controls, procedures, and organizational structures may have less technical and cost-effectiveness. This may be a clue to the Security Exchange's underdeveloped state of using cutting-edge technologies.

The third objective of the study sought to examine the effect of capital employed on the financial performance of firms listed in the Nairobi Security Exchange. This was achieved by testing the following hypothesis:

Hypothesis 3($H0_3$) *stated that capital employed has no significant effect on the financial performance of listed firms in the Nairobi Security Exchange.*

Findings showed that capital employed had significant coefficients of estimation based on $\beta 3 = 0\ .95$, p-value = 0.000 which is less than $\alpha = 0.000$ thus capital employed had a positive and significant effect on firm financial performance, indicating an improvement of up to 0.95 unit in firm financial performance for each unit of increased in capital employed. This result demonstrates the potential of the listed companies on the Nairobi Securities Exchange to produce higher value for each shareholder shilling to enhance its financial performance. The result further indicates that CEE's effect on efficiency scores is positive, suggesting that listed firms in NSE can create higher value from shareholder funds are also effective. This provides

evidence of the shareholder value theory and focuses on the maximization of shareholder value in the Nairobi Security Exchange.

The fourth objective of the study sought to establish the effect of innovation capital on the financial performance of firms listed in the Nairobi Security Exchange. To achieve this objective, the following hypothesis was tested.

Hypothesis 4($H0_4$) *stated that innovation capital has no significant effect on the financial performance of listed firms in the Nairobi Security Exchange.*

Findings showed that innovation capital estimated coefficient was statistical significantly on ($\beta 4 = 0.14$, p-value = 0.000 which is less than $\alpha = 0.000$) hence it was concluded that innovation capital had a positive and significant effect on firm financial performance, suggesting that there was an increase in the firm financial performance of up to 0.14 units per unit of innovation increase. Ultimately, the null hypothesis was rejected and it was concluded that innovation capital had a significant effect on the financial performance of publicly-traded companies in NSE. This implies that Innovation capital increases the firm financial performance among firms in Nairobi Security Exchange. The results may be a consequence of both a reduction in demand and expenditure, namely in research and development in the NSE for new security products. Ultimately innovation does not seem to consistently surpass the impact of the specific institutional environment and economic uncertainty in Kenya on the performance of firms. Results, therefore, imply that innovation efforts lead to cutting-edge technologies which, in effect, does not translate into higher financial performance. This indicates improving the company's innovation capital in the Nairobi Security Exchange could drive better financial performance is called for. Nonetheless, if the investments hit an optimal level, continuous R&D spending (a

proxy measure of Innovation Capital) will increase the financial performance to the contrary.

This is in line with Kinot's (2009) findings which demonstrated that investment in technology, specifically research and development, contributed directly to a company's higher performance, as Slater *et al*. (2012) also cited. Benedetto and Mu's (2011) findings aligned with current findings that innovation-based technology creates new products that lead to high company performance. In particular, the findings of Anal *et al*. (2011) supported the conclusions of the current study is suggesting that the relationship between technology and rim financial performance is positive and significant.

The fifth objective of the study sought to establish the effect of intellectual capital on the financial performance of firms listed in the Nairobi Security Exchange. To achieve this objective, the following hypothesis was tested.

Hypothesis 5 ($H0_5$) VAIC *has no significant effect on the financial performance of firms listed in the Nairobi Security Exchange.*

It examined if aggregated IC's indicators are related to the financial performance of companies calculated by Tobin's Q. IC through particular, they were found to have a positive effect on Tobin's Q (β= 0.02, p-value= 0.000 which is less than α= 0.05). It means an increase of 0.02 units of VAIC efficiency will result in an increase in firm financial performance by a unit. Consequently, the null hypothesis was rejected and it was concluded that intellectual capital had a significant impact on the financial performance of listed companies in NSE. This suggests a direct positive effect of intellectual capital (MVAICTC) on firm financial performance (Tobin's Q), which

suggested that any increase in the efficiency of VAIC would enhance the profitability of the firm. This illustrated that intellectual capital affected traditional financial performance. Superior intellectual property owned by a company, as viewed from RBT's perspective was the resources of the company as capital for better management of organizations. It is assumed that the strength of the company's intellectual capital influences financial performance.

The above findings are consistent with the studies reported by IC to have a positive association with the financial performance of the enterprises (Komnenic and Pokrajcic, 2012; Yalama, 2013). The current study findings were contrary to the findings of (Abdulsalam *et al*., 2011; Gruian, 2011), that had a diverse and mixed relationship between IC and financial performance.

IC computes the amount of new value per invested monetary unit that has been generated in the firm. This method for analyzing the effectiveness of value added is designed to effectively track and evaluate the various stakeholders through both the organization's total resources and each major resource element. A high coefficient requires a higher quality creation using the organization's capital, like IC. Formerly, IC has been disintegrated into three parts by prior literature: human capital, social capital, and relation capital. But the present study endeavored to split into four parts before emerging literature.

The sixth objective of the study sought to establish the effect of CE tenure on the financial performance of firms listed in the Nairobi Security Exchange. To achieve this objective, the following hypothesis was tested.

Hypothesis *6 (*$H0_6$*)* *CEO tenure has no significant effect on the financial performance of firms listed in the Nairobi Security Exchange.*

The current study investigated whether the CEO tenure was correlated with the financial performance of companies listed in NSE, Kenya, proxied by Tobin's Q. IC, which had a significant positive impact on Tobin's Q ($\beta 1 = 0.04$, p-value= 0.000 which is less than $\alpha = 0.05$). the results on CEO tenure was concluded to have a positive and significant impact on the financial performance of the company. This suggested that for each unit change in CEO tenure, there was an improvement of up to 0.02659 units in firm financial performance. Consequently, the null hypothesis was dismissed and it was concluded that the tenure of CEOs had a major impact on the financial performance of publicly traded companies. This thesis found the link between a firm financial company and CEO tenure to be positive and statistically significant. In regards to their tenure, CEOs are more likely to commit more resources to innovation and accept more risk because they are better able to establish purpose unity and synchronize actions. Bhatt and Bhattacharya (2015) also found that the term of office of the CEO has a significant impact on the performance of the company measured by Market to Book and ROA.

A study by Mohamed *et al*. (2015), which is 2000-2011 used a sample of 53 transport companies from 17 public countries, found that the tenure of the CEO had a substantial impact on the performance of the company. Miller's (1991) findings are inconsistent. This paper concluded that if longevity increases, the approach of the CEO is less likely to change. Stability and reliability are preferred to inconsistency. This can either come from the fact that the CEO is sure of their own plan or the fact that there is a loss of interest in the business climate and they have stopped

reinventing. Naveen (2006) documented a negative correlation between CEO tenure and R&D expense, but Daellenbach, McCarthy, and Schoenecker (1999) and Barker and Mueller (2002) didn't find a clear direct effect on tenure.

4.5.3 Regression Results for Moderation Effects

A moderator variable influences the essence of an antecedent's effect on an outcome (e.g., magnitude and/or direction) (Aguinis, Edwards & Bradley, 2016). A hierarchical random effect model was used to test the moderation effect of CEO tenure on the relationship between intellectual capital and firm performance.

Drawing from the study results in Table 4. 12 on page 147 the interaction effects of CEO tenure on specific IC dimensions were discussed for model 6 to model 10 on page 139 to 142

Hypothesis 7a ($H0_{7a}$) *claimed that CEO tenure had no significant moderating influence on the relationship between human capital and financial performance of the listed companies in the Nairobi Security Exchange.*

Findings from subsequent models showed that after moderating the relationship between human capital and firm performance using CEO tenure there was an increase of -0.5% R square improvement from Model 6 to model 10 (Interaction) (R2 Change=-0.005, Wald $\chi 2$ =8.656, p=0.000). The hypothesis has therefore been rejected. It shows that CEO tenure enhances the relationship between human capital and company performance significantly. This means that the tenure of CEOs weakens the relationship between human capital and firm performance. Human capital, therefore, decreases the financial performance of listed companies in the Nairobi Security Exchange under higher CEO tenure (β= 0.18; p >0.05).

Hypothesis 7b (**$H0_{7b}$**) *stated that CEO tenure has no significant moderating effect on the relationship between structural capital and financial performance of listed firms in the Nairobi Security Exchange.*

Findings showed that after introducing the CEO tenure on the relationship between structural capital and firm performance there was an increase in R2 change of 0.3% from Model 6 to Model 7 (R2 change=.003, Wald $\chi 2 = 8.656$, p= 0.000). This infers that CEO tenure significantly moderates the relationship between structural capital and firm performance. The results indicated a positive and significant moderating effect of CEO tenure on the relationship between structural capital and firm financial performance (β= 012; ρ>0.05). Hence, the hypothesis that CEO tenure has no significant moderating effect on the relationship between structural capital and firm financial performance was rejected.

Hypothesis 7c (**$H0_{7c}$**) *stated that CEO tenure has no significant moderating effect on the relationship between capital employed and the financial performance of listed firms in the Nairobi Security Exchange.*

The study findings indicated an increase of 2 percent from Model 7 to Model 8 after the interaction of the CEO's tenure on the relationship between capital employed and financial performance R squared changed (R2 change= 2%= 155.770, p= 0.000). The findings showed a significant moderating effect of CEO tenure on the relationship between capital employed and the financial performance of listed companies on the Nairobi Security Exchange (β= 0.01; π<0.05). Therefore, the hypothesis that stated

CEO tenure has no moderating effect on the relationship between capital employed and financial performance was rejected. Consequently, CEO tenure strengthens the relationship between employed capital and the firm's financial performance

Hypothesis 7d ($H0_{7d}$) *stated that CEO tenure has no significant moderating effect on the relationship between innovation capital and financial performance of listed firms in the Nairobi Security Exchange.*

Findings showed after interaction of CEO tenure on the relationship between innovation employed and financial performance R squared changes by 0.4% from model 8 to model 9 (R2 change=0.4%, Wald $\chi 2$ = 16.750, p=0.60). The results indicated a negative significant moderating effect of CEO tenure on the relationship between innovation capital and financial performance. (β= 0.12; ρ<0.05). Hence, the hypothesis $H\mathbf{0_{7d}}$ was accepted.

Hypothesis 8 (HO_8) *CEO Tenure does not moderate the relationship between VAIC and financial performance of listed firms in the Nairobi Security Exchange.*

Findings showed after interaction of CEO tenure on the relationship between capital employed and financial performance R squared change increase by 0.2% from model 9 to model 10 (R2 change=.020, Wald $\chi 2$ = 155.770, p= 0.000). The results indicated the significant moderating effect of CEO tenure on the relationship between Value Added Intellectual Capital and financial performance of listed firms in Nairobi Security Exchange (β= 0.14; ρ<0.05).

The CEO tenure is positively associated with the quality in low to moderate tenure. Nonetheless, even at high levels of CEO tenure, investor interests can be protected in the presence of a diligent board. Longer CEO tenure can contribute to gains in

corporate performance only if a positive relationship between relations among employees is achieved (Wang *et al*., 2009). However, empirical studies have shown that no extremely short or extremely long tenures contribute positively to a business' financial performance (Hambrick & Fukutomi, 1991). Luo *et al*. (2013) analyzed the effect of CEO tenure on both employees and customers. They found that a long tenure as CEO strengthens the relationship between company and employee, but weakens the relationship between company and customer. Longer tenured CEOs are progressively less attuned to market and client demands due to the amount of expertise they have gained and the extent to which they are entrenched. In other words, they refuse to respond appropriately to consumer preferences due to their excessive investment in the company and commitment to the status quo.

It is interesting whether a CEO's attributes have an impact on the company's various choices and results (Adams, Almeida, and Ferreira, 2005). According to the Agency theories of Jensen and Meckling (1976), CEOs act in their interests, risk aversely, and have ambitions that are incompatible with shareholders ' objectives. The CEO will, therefore, participate in initiatives and acts that are beneficial to itself without considering investor outcomes. Alutto and Hrebiniak (1975) have built a positive relationship between long-term CEOs and their dedication to their results. Higher dedication resulted in higher opportunities for good performance. Miller (1991) concluded that if longevity increases, the approach of the CEO is less likely to change. Stability and efficiency are preferred to inconsistency. This can be attributed to either the fact that the CEO is sure of their plan or the loss of interest in the corporate environment is lost and reinventing has stopped. This study is more strongly believed in the positive correlation between client commitment and tenure, which may ultimately lead to higher results.

4.6 Testing for Moderation Effect of CEO tenure using mod graphs

Fig 4.1 shows a Graphic representation of moderating effects of CEO tenure in the medium on the indirect link between human capital efficiency and firm performance intention (conditional indirect effect based on Z (CEO tenure in medium) when W (performance) is low). The findings indicate that under high CEO tenure the effect of human capital will below.

Figure 4. 1: Moderating effect of CEO tenure on SCE and FP

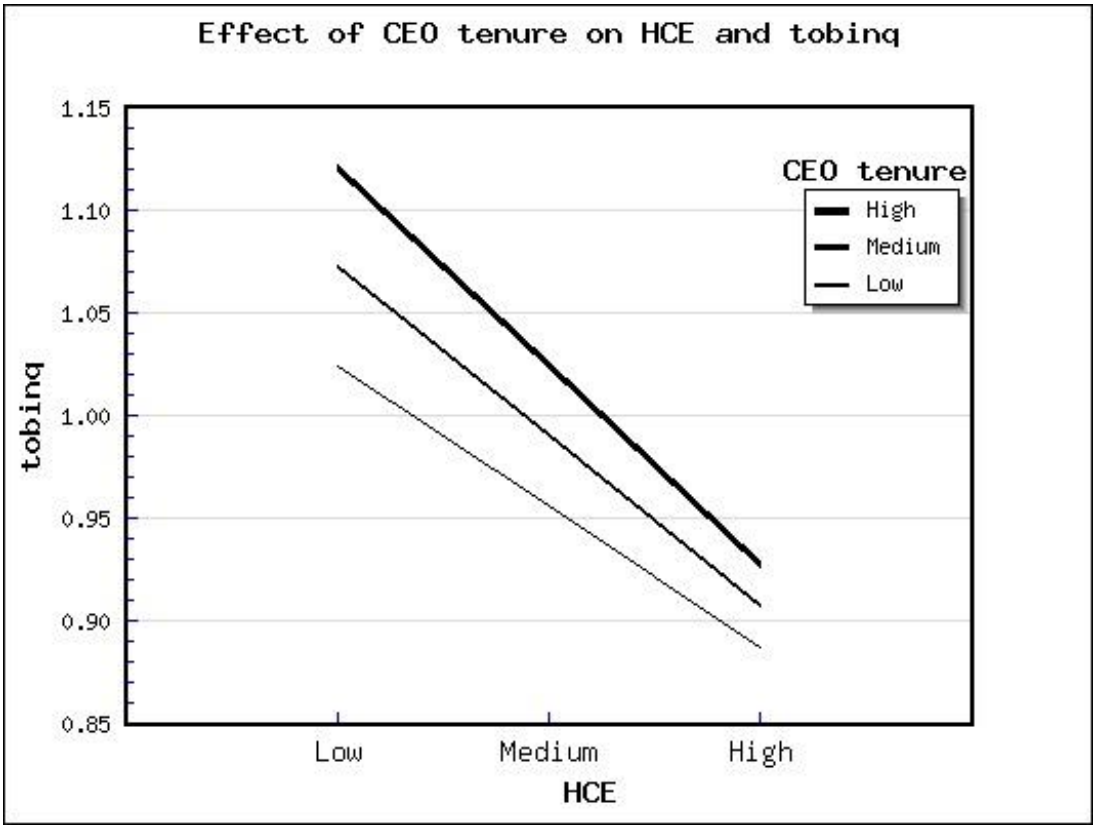


Figure represents a graphical presentation of moderating effect of CEO tenure on the relationship between structural capital efficiency and firm performance. The finding from figure 4.2 shows that under high CEO tenure in enhancing the relationship between the independent and the dependent variables respectively firm performance is at high levels under conditional effect of structural capital efficiency.

Figure 4. 2: Moderating effect of CEO tenure on SCE and Tobin's Q

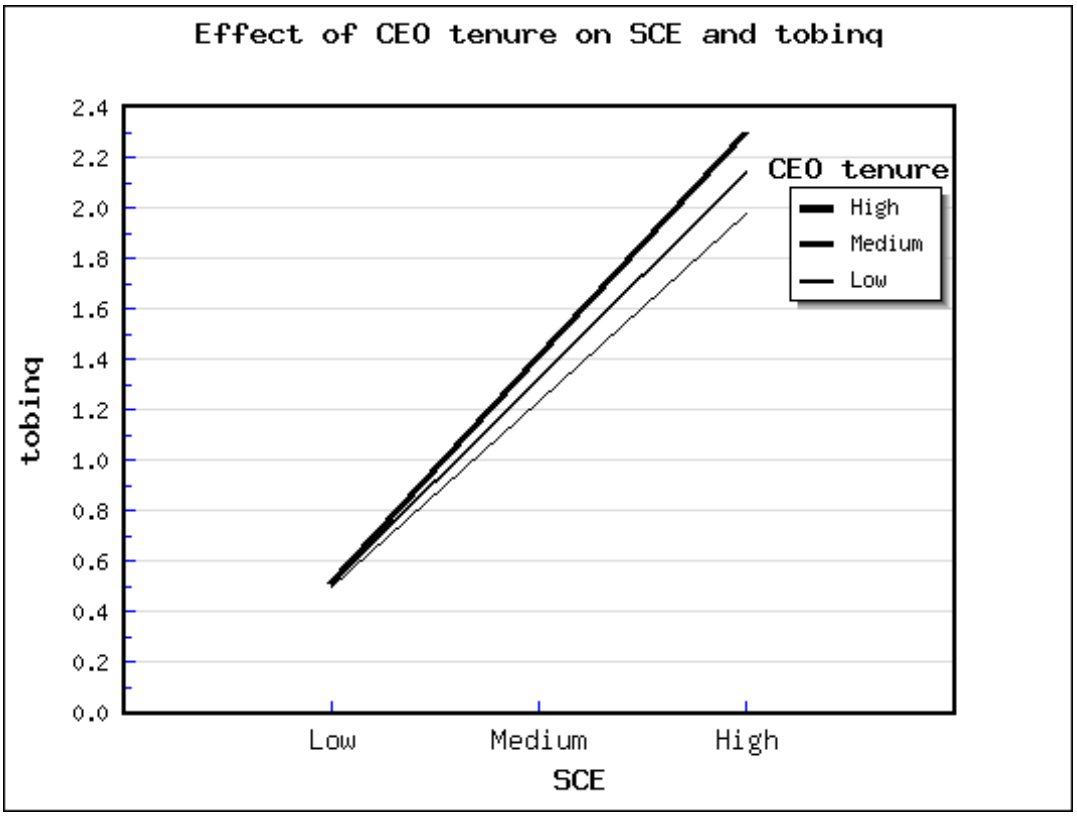


Fig 4.3 shows Graphic representation of moderating effects of CEO tenure in the medium on the indirect link between Capital Employed Efficiency and firm performance intention (conditional indirect effect based on Z (CEO tenure in medium) when W (performance) is low). The findings indicate that under high CEO tenure buffering the levels of the firm financial performance and Capital Employed will be low.

Figure 4. 3: Moderating effect of CT on CEE and FP

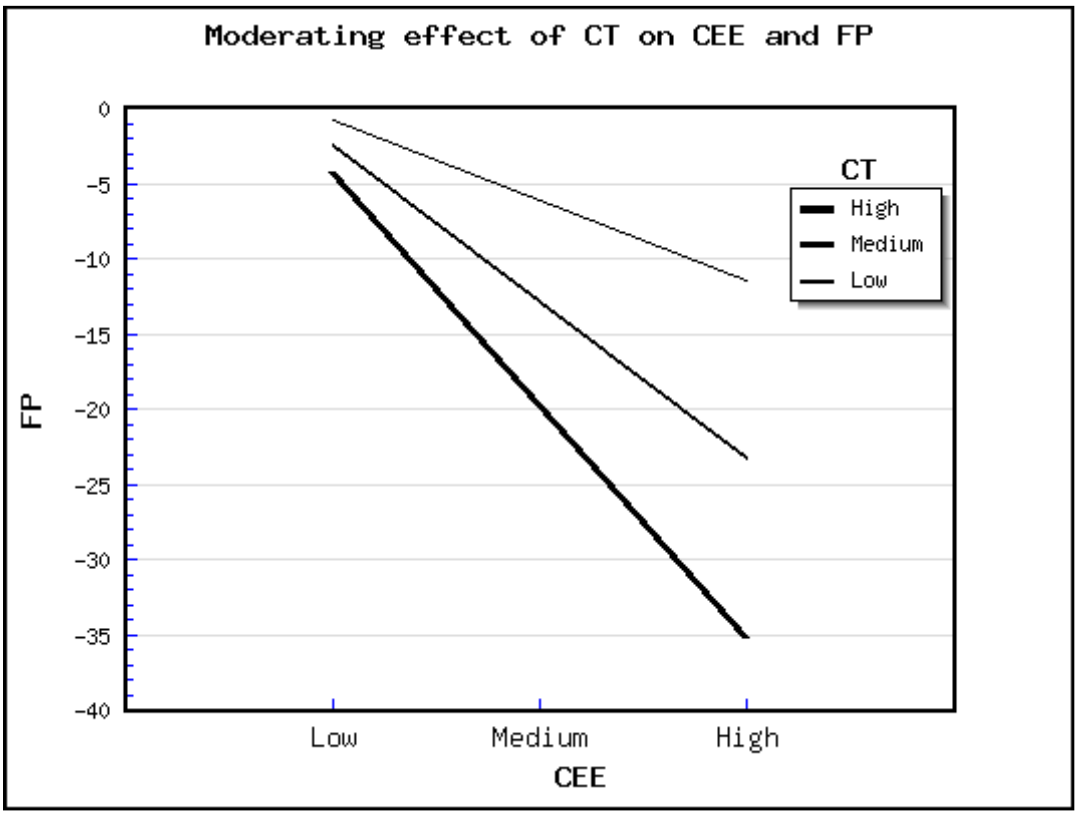


Fig 4.4 shows Graphic representation of moderating effects of CEO tenure in the medium on the indirect link between Intellectual Capital Efficiency and firm Financial performance intention (conditional indirect effect based on Z (CEO tenure in medium) when W (performance) is low). In general, one can infer from the findings of the study that CEO tenure have moderating effect on the relationship between independent variables and financial performance. This shows a significant presence of moderating effect of CEO tenure in antagonizing the relationship between independent variables and financial performance.

Figure 4. 4: Moderating effect of CT on VAIC and FP

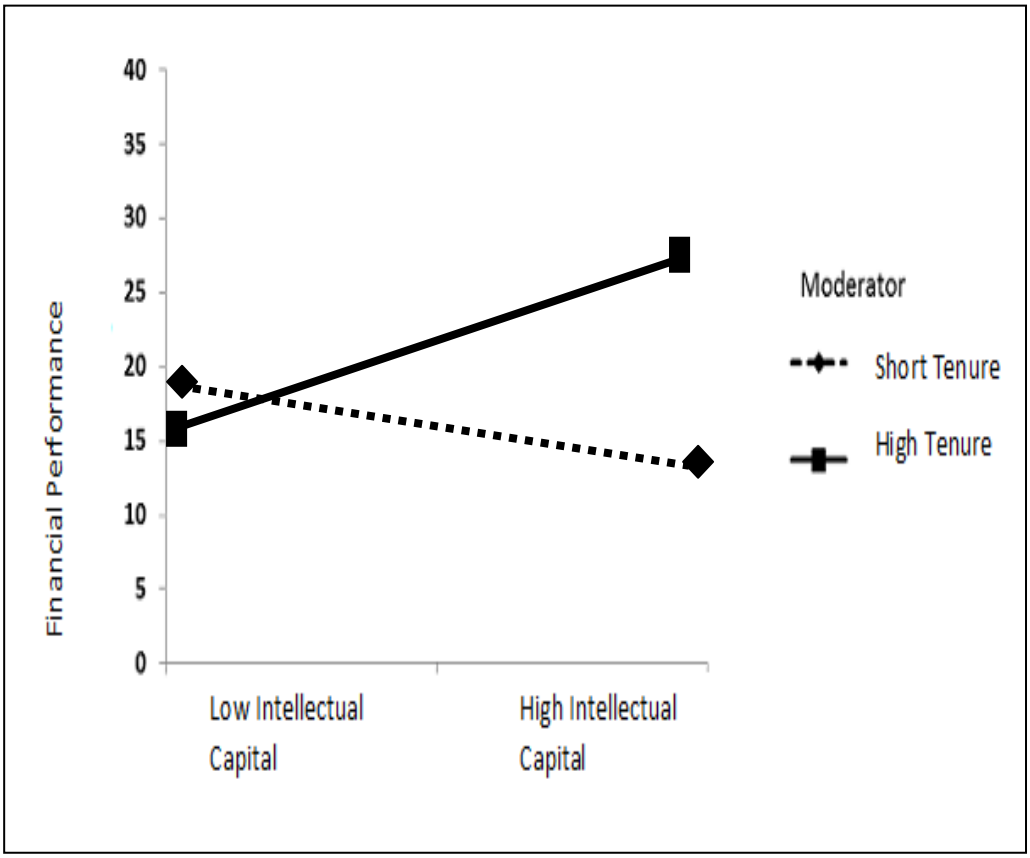


Table 4. 11: Regression Analysis Results

Tobin's Q	Model 1 Coef.	Model 2 Coef.	Model 3 Coef.	Model 4 Coef.	Model 5 Coef.	Model 6	Model 7 Coef.
Constant	3.09(0.60) **	0.75(0.35) **	0.67 (0.35) *	0.51 (0.61) **	0.64(0.35) *	0.636(1.81)	0.64(0.35) **
Controls							
Age	0.02(0.00) **	-0.01(0.08) *	0.00 (0.17)	0.00(0.07)	0.00(0.08)	-0.483(-2.97) *	0.00(0.09)
Industry	-0.99(0.22) **	-0.52 (0.18) **	-0.49 (0.17) *	-0.51 (0.19) **	-0.48(0.15) **	-.48 4(-2.97) *	-0.50(0.16) **
Firm Size	-0.26(0.07) **	-0.05 (0.30)	-0.03 (0.33) *	-0.02(0.31)	-0.04(0.29)	-0.013(-0.04)	-0.03(0.32) *
Predictors							
HCE		0.07 (0.02) **	0.15(0.05) **	0.15(0.03) *	0.17(0.04) **	0.178(3.17) **	0.18(3.17) **
SCE		0.13(0.03) **	0.05(0.02) *	0.04(0.03)	0.03(.03)	0.117 (1.89)	0.11 (0.61)
CEE		0.03(0.01) **	0.14(0.03) **	0.11(0.03) *	0.14(0.04) **	0.110(3.05) *	0.95 (4.77) *
INCE		0.05(0.02) *	0.10(0.04) **	0.10(0.02) **	0.12(0.03) *	0.114(2.19) *	0.14 (2.19) *
VAIC		.12(6.37) *	0.21(5.71) **	0.45(4.06) *	.10(9.37) **	0.022(2.13) *	0.02(2.13) *
Moderator							
CEO Tenure		0.10(0.02) **	0.04(0.12) **	0.04(0.03) **	0.04(0.02) *	0.040(5.19) *	0.04(0.01) **
Interactions							
HCE*CT			-0.02(0.00) **	-0.01(0.00) **	-0.03(0.01) **	0.02(2.89) **	-0.12 (-1.52) * *
SCE*CT				0.04(0.00) *	0.02(0.01) **	0.054(2.47) *	0.01 (-3.06) *
CEE*CT					0.02 (0.02) **	0.00 (-2.71) *	0.00 (-2.69) *
INCE*CT						0.00(0.69)	-0.03(-3.61) *
VAIC*CT							0.14(3.47) *
R-sq: within	0.020	0.162	0.174	0.175	0.173	0.172	0.176
R-sq: between	0.313	0.423	0.413	0.417	0.443	0.441	0.443
R-sq: overall	0.260	0.373	0.368	0.371	0.389	0.391	0.396
R-sq change	-	0.113	-0.005	0.003	O.018	0.002	0.005
Sigma_u	0.686	0.546	0.529	0.522	0.503	0.498	0.503
Sigma_e	0.424	0.393	0.390	0.390	0.390	0.390	0.390
rho	0.723	0.658	0.649	0.642	0.624	0.619	0.619
Wald $\chi 2$ (3)	33.760	140.95	151.380	151.950	155.770	156.75	16.750
Prob > $\chi 2$ =	0.000	0.000	0.000	0.000	0.000	0.000	0.060
Durbin Watson	1.021	1.991	2.001	2.113	2.072	1.879	2.130
Total panel observations	576	576	576	576	576	576	576

****significance level 0.01, *significance level 0.05; figures in parenthesis are t-statistics; source: Research Data, (2018)**

From the hierarchical regression beta coefficients, regression equation was then obtained as had been modelled in chapter three to predict the relationship among the study variables.

They general analytical model for the direct relationship was as follows:

$$FP_{it} = 0.64 + 0.01\text{FAge}_{it} - 0.03\text{Fsize}_{it} - 0.5\text{IND}_{it} + 0.18\text{HC}_{it} + 0.11_{5it}\text{SC}_{it} + 0.95\text{CE}_{it} + 0.14\text{INVC}_{it} + 0.02\text{VAIC}_{it} + 0.14\text{CT}_{it} + 0.01\text{HCE} * \text{CT}_{it} + 0.12\text{SCE} * \text{CT}_{it} + 0.01\text{CE} * \text{CT}_{it} - 0.03\text{INC} * \text{CT}_{it} + 0.14\text{VAIC} * \text{CT}_{it} + \varepsilon$$

FP_{it} is dependent variable (firm performance as measured by Tobin's Q ratio)

HC_{it}= human capital of firm *i* at time *t.*

SC_{it}= structural capital of firm *i* at time *t.*

CE_{it}= capital employed of firm *i* at time *t.*

$INEC_{it}$= innovation capital of firm *i* at time *t.*

$VAIC_{it}/IC_{it}$= Intellectual capital components

CT_{it}= CEO tenure of firm *i* at time *t.*

$SIZE_{it}$= firm size of firm *i* at time *t.*

AGE_{it}=Firm age of firm *i* at time *t.*

IND_{it}= Industry of sector *i* at time *t.* of firm *i* at time *t.*

β_{0i}= *y*–intercept of firm *i.*

ε_{it} = error term error term of firm *i* at time *t.* (random variation due to other unmeasured factors).

The hierarchical regression models were as follows:

1. The equation model 1 in chapter three was to test for the effects of the control variables. The findings indicated that all the control variables were significant and thus their inclusion in model 1.

$$FP_{it} = 3.09 + 0.02FSize - 0.26FAge_{it} - 0.99IND_{it} + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots 1$$

2. Model two had the inclusion of moderating variable CEO tenure which was significant. The only significant control variable was the industry. The direct variables human capital, structural capital, capital employed and innovation capital were all significant. Thus, the equation of the model too the form:

$$FP_{it} = 0.75 - 0.01\text{FSize}_{it} - 0.01\text{FAGE}_{it} - 0.52\ \text{IND}_{it} + 0.07\ \text{HCE}_{it} + 0.13\text{SCE}_{it} + 0.03\text{CEE}_{it} + 0.05\text{INCE}_{it} + 0.12\text{VAIC}_{it} + 0.10\text{CT}_{it} + \varepsilon \quad \ldots\ldots\ldots 2$$

3. Model three had the inclusion of the interaction between the moderator (CEO tenure) with Human capital which were all significant. Therefore, the equation for the model took the form:

$$FP_{it} = 0.67 - 0.03\ FSIZE_{it} - 0.49\ \text{IND}_{it} + 0.15\text{HC}_{it} + 0.05\text{SC}_{it} + 0.14\text{CE}_{it} + 0.10\text{INC}_{it} + 0.04\text{CT}_{it} + 0.21\text{VAIC}_{it} - 0.02\text{HC}_{it} * \text{CT}_{it} + \varepsilon \quad \ldots\ldots\ldots\ldots 3$$

Whereas

FP_{it} = firm performance and firm size, firm age and industry and ε is the error term associated with this model. Whereas HC, SC, CE and INEC were human capital, structural capital, capital employed and innovation capital. HCE*CT is the interaction between CEO tenure and human capital and ε is the error term associated with this model.

4 Model four had the inclusion of the interaction between the moderator (CEO tenure) with human capital and with structural capital which were all significant. Hence the equation for model 4 took the form of:

$$FP_{it} = 0.51 - 0.51\,\mathrm{IND}_{it} - 0.02\mathrm{Fsize}_{it} + 0.15\mathrm{HC}_{it} + 0.04\mathrm{SC}_{it} + 0.11\mathrm{CE}_{it} + 0.10\mathrm{INVC}_{it} + 0.45\mathrm{VAIC}_{it} + 0.04\mathrm{CT}_{it} - 0.01\mathrm{HC}_{it} * \mathrm{CT}_{it} + 0.04\mathrm{SC}_{it} * \mathrm{CT}_{it} + \varepsilon \ldots\ldots\ldots 4$$

FP_{it} is firm performance and firm size, firm age and industry and ε is the error term associated with this model. Whereas HC, SC, CE and INEC were human capital, structural capital, capital employed and innovation capital. HCE*CT is the interaction between CEO tenure and Human capital and SCE*CT is the interaction between CEO tenure and structural capital. Whereas ε is the error term associated with this model.

5. Model five had the inclusion of the interaction between the moderator (CEO tenure) with human capital, with structural capital and capital employed which were all significant. Hence the equation for model 5 took the form of:

$$FP_{it} = 0.64 - 0.48\mathrm{IND}_{it} - 0.04\mathrm{Fsize}_{it} + 0.17\mathrm{HC}_{it} + 0.03\mathrm{SC}_{it} + 0.14\mathrm{CE}_{it} + 0.12\mathrm{INVC}_{it} + 0.10\mathrm{VAIC}_{it} - 0.03\mathrm{CT}_{it} - 0.03\mathrm{HC}_{it} * \mathrm{CT}_{it} + 0.02\mathrm{SC}_{it} * \mathrm{CT}_{it} + 0.02\,\mathrm{CE}_{it} * \mathrm{CT}_{it} + \varepsilon \ldots\ldots\ldots 5$$

FP_{it} is firm performance and firm size, firm age and industry and ε is the error term associated with this model. Whereas HC, SC, CE and INEC were human capital, structural capital, capital employed and innovation capital. HCE*CT was the interaction between CEO tenure and Human capital, SCE*CT was the interaction between CEO tenure and structural capital and CEE*CT was the interaction between CEO tenure and capital employed and ε is the error term associated with this model.

6 Model six had the inclusion of the interaction between the moderator (CEO tenure) with human capital, with structural capital, capital employed and the innovation capital in which only human capital, with structural capital and capital employed were significant. Hence the equation for model 6 took the form of:

$$FP_{it} = 0.64 - 0.01\text{FSize}_{it} - 0.48\text{IND}_{it} + 0.18\text{HCE}_{it} + 0.1248\text{SCE}_{it} + 0.11\text{CEE}_{it} + 0.11\text{INCE}_{it} + 0.022\text{VAIC}_{it} + 0.04\text{CT}_{it} + 0.02\ \text{HCE}_{it} * \text{CT}_{it} + 0.054\ \text{SCE}_{it} * \text{CT}_{it} + 0.02\text{INCE}_{it} * 0.04\text{CT}_{it} + \varepsilon \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 6$$

HCE*CT was the interaction between CEO tenure and Human capital, SCE*CT was the interaction between CEO tenure and structural capital and CEE*CT was the interaction between CEO tenure and capital employed and ε is the error term associated with this model and ε is the error term associated with this model. INCE*CT, was the interaction between CEO tenure and innovation capital was insignificant

7 Model seven had the inclusion of the interaction between the moderator (CEO tenure) with the sum of the Intellectual capital elements which was significant. Hence model seven equation was:

$$FP_{it} = 0.34 - 0.50\text{IND}_{it} - 0.03\text{FSize}_{it} + 0.18\text{HC}_{it} + 0.11\ \text{SC}_{it} + 0.95\text{CE}_{it} + 0.14\text{INC}_{it} + 0.02\text{VAIC}_{it} + 0.04\text{CT}_{it} - 0.12\text{HC}_{it} * \text{CT}_{it} + 0.12\ \text{SC}_{it} * \text{CT}_{it} + 0.01\text{CE}_{it} * \text{CT}_{it} - 0.03\text{INC}_{it} * \text{CT}_{it} + 0.14\text{VAIC}_{it} * \text{CT}_{it} + \varepsilon \quad \ldots\ldots\ldots\ldots\ldots\ldots 7$$

VAIC*CT was the interaction between CEO tenure and the sum of the Intellectual capital elements.

Table 4. 12: Summary of Test of Hypotheses Results

Hypothesis	Beta	*p* – Values	Decision
Hypothesis Ho_1: Human capital has no significant effect on financial performance of listed firms in Nairobi Security Exchange	0.18	ρ<0.05	Reject
Hypothesis Ho_2: Structural capital has no significant effect on financial performance of listed firms in Nairobi Security Exchange	0.11	ρ>0.05	Accept
Hypothesis Ho_3: Capital employed has no significant effect on financial performance of listed firms in Nairobi Security Exchange	0.95	ρ<0.05	Reject
Hypothesis Ho_4: Innovation capital has no significant effect on financial performance of listed firms in Nairobi Security Exchange	0.14	ρ<0.05	Reject
Hypothesis Ho_5: VAIC has no significant effect on financial performance of firms listed in Nairobi Security Exchange.	0.02	ρ<0.05	Reject
Hypothesis Ho_6: CEO tenure has no significant effect on financial performance of firms listed in Nairobi Security Exchange.	0.04	ρ<0.05	Reject
Hypothesis Ho_{7a}: CEO Tenure does not moderate the relationship between human capital and financial performance	0.12	ρ<0.05	Reject
Hypothesis Ho_{7b}: CEO Tenure does not moderate the relationship between structural capital and financial performance	0.03	ρ<0.05	Reject
Hypothesis Ho_{7c}: CEO Tenure does not moderate the relationship between capital employed and financial performance	0.004	ρ<0.05	Reject
Hypothesis Ho_{7d}: CEO Tenure does not moderate the relationship between innovation capital and financial performance	-0.02	ρ<0.05	Reject
Hypothesis Ho_8: CEO Tenure does not moderate the relationship between intellectual capital and financial performance of listed firms in Nairobi Security Exchange.	0.14	ρ<0.05	Reject

p<0.05:* ***Source: Research Data (2018)*

CHAPTER FIVE
SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section of the study provides a recap of the findings, conclusion and recommendations for future research that are deemed important for the extension of the research.

5.2 Summary of the Findings

The performance of the listed firms in the Nairobi Securities Exchange seems to have been fluctuating and even stagnated for a while despite the availability of better and modern organizational resources. Previous studies done on performance globally and in Kenya did not focus on the intellectual capital components using secondary data. The current study sought to investigate the effects of intellectual capital components on the firm financial performance of the listed firms in the Nairobi Securities Exchange and analysed the strengths of the relationship between the intellectual capital components, CEO tenure, and firm financial performance.

The study collected data from a sample of 48 listed firms at the Nairobi Security Exchange. The sample covered a period ranging from 2006 to 2017 which yielded 576 firm's year observable data.

5.2.1 Effect of human capital on firm financial performance

Findings showed that human capital had an insignificant effect on financial performance. This indicates hypothesis 1 was accepted ($\beta 1 = 0.18$, p-value = 0.000). Hence, human capital does lead to an increase in financial performance. While a similar finding to the current study, a positive correlation between HC measures and

firm performance was identified by a study done by Seleim, Ashour, and Bontis (2007), which focused on software companies. The measures dealt with by the study were the training attended by the workers and their participation in teamwork exercises was statistically significant and enhanced the overall company performance.

Besides, Josan (2013) concluded that training-related growth in human capital is linked to a 16 percent increase in performance and profitability. Human capital has a significant relationship with bank performance in the banking sector (Cabrita & Vaz 2005). In comparison with other indicators such as SCE and CEE, it has been found that human capital has better performance for a company (Saeedi *et al*., 2011).

Saeedi *et al.* (2012) stipulated that human capital is correlated with employee productivity was statistically positive and significant given the current literature, human capital effects on firm financial performance either directly or indirectly. In the ten years between 1996 and 2006, Kamath (1988) analysed the relationship between IC elements, financial, processes and physical capital, and the traditional metrics of the company's performance, namely productivity, competitiveness, and market valuation of pharmaceutical and drug companies in India.

Additionally, HC control and deployment are correlated by Bontis and Fitzenz (2002) with better financial performance for firms. In 2001-2005, Chan (2009) investigated in Hong Kong's 2001-2005 stock exchanges the relationship between human property and financial performance metrics (productivity, investment return, competitiveness, and price for the market).

There were quantitative determinations of the direct relationship between the IC and the financial performance parameters. These findings were on contrary with several

studies such as; Segal *et al*. (2009) who highlighted the role of human capital in interpreting the relative performance of similar companies

As seen in the VAIC ratings, the listed companies Nairobi Security Exchange appears to be performing well and efficiently using their IC components. The empirical analysis revealed that human capital had a big impact on the performance of companies during the study. This research, however, found a relationship between human capital and company financial performance, which acts as a framework for additional studies. Because of the positive relationship between human capital and organizational performance, leaders of organizations should pay particular attention and invest in improved know-how, capacities, and skills. Which in the long run enables staff to increase their output to enhance the performance of the firms in the Nairobi Security Exchange.

5.2.2 Effect of structural capital on firm financial performance

Structural capital was found to be statistically insignificant on financial performance. Given the findings on objective two we failed to reject the null hypothesis, ($\beta 2 = 0.12$, (p-value = 0.541). This contradicts the theoretical expectation that structural capital helps to create and transform knowledge and support employees' productivity. Contrary to the results of Youndt, (2000) which established that structural capital promotes structural performance and growth of a company. Further support of the study findings is by Saeedi and Mahmoodi (2011) who established that competitiveness improved business capital among firms listed in the Tehran Stock Exchange. Similarly, the positive and significant relation between structural capital and company performance was identified by Abolhassani (2012). Ahmad and Sunday (2012) have found that corporate capital significantly improves efficiency. Adekunle

(2009) has argued that the debt ratio would be a threat to the financial performance of corporations in an important analysis of institutional assets on company efficiency. Besides, Berger and Patti (2006) found that the source of institutional capital influences the rate of company quality in an investigation directed at private enterprises in Egypt. In another study by Berger and Patti (2006) that relied on 210 companies between 1995 and 2005, it was established that structural capital has a significant impact on company competitiveness after controlling for firm size, on-duality, leverage, and growth. Without a doubt, structural capital doesn't contribute significantly to firm financial as confirmed by these study findings contrary to prior studies elsewhere.

5.2.3 Effect of capital employed on firm financial performance

The study established a positive and significant effect of capital employed on financial performance. Thus, hypothesis 3 was rejected ($\beta 3 = 0.95$, p-value = 0.005). This infers that with an increase in capital employed, there is an increase in financial performance. In line with these the current results, the extant literature has confirmed that CEE influences firm performance (Chan, 2009b).

Studies by Khalique *et al*. (2011) study of IC on organizational performance of commercial banks, Appuhami and Bhuyan (2015) studied listed companies in the Thailand stock market. The results from both works showed that capital employed had a positive relationship with organizational performance. The study established a positive and significant effect of capital employed on financial performance. Riahi-Belkaoui (2003) has found a positive correlation between intellectual capital and transnational corporate financial success in America. Khalique *et al*. Studies (2011) IC report on the institutional performance of listed Thai share banks in Appuhami and

Bhuyan (2015). The findings of both works showed a strong relationship between the hired resources and the quality of the enterprise. The conclusions are similar to those of Oppong and Pattanayak (2019). Their study shows that CEE has had a significant impact on employee performance by panel-modeling of data amongst 73 commercial banks in India over 12 years (2006-17).

5.2.4 Effect of innovation capital on firm financial performance

Hypothesis 4 of the study was also rejected, and that innovation capital had a positive and significant effect on financial performance ($\beta 4 = 0.14$, p-value = 0.000). The findings further endorse Rajapathirana and Hui (2018). They analysed the effect of innovation ability, innovation activities, and firm success using the SEM model. All the pathways were wide ($p<0.05$). Taking into account the findings of Marques et.al. (2011) indicated that supporting businesses to innovate would lead to better business and financial performance for companies. The results were also in line with those of Varis & Littunen (2010) in which businesses can improve their performance and effectiveness in innovative and development activities. Similarly, the findings of the OECD (2005) explicitly show that innovation capital is the primary engine of development and economic growth. Also, recent research indicates that investment in technology leads to the competitiveness, financial and non-financial quality of a company (Phusavat *et al*. 2011; Sharabati *et al*. 2010; Shih *et al*. 2010; Hsu and Fang 2009; Kang and Snell 2009; Kong and Thomson 2009; Longo *et al*. 2009). The results of this study are in line with those of Huang and Liu (2005), which explored the relationship between technology, IT, and achievement. Their work found a positive impact on performance on the interaction between IT capital and technology capital. The existing research has clearly established that funding for technology has a

positive impact on company performance. Overall, the results of the study support pre-innovation capital impact studies measured by various representatives on corporate financial performance.

5.2.5 Effect of intellectual capital on firm financial performance.

A significant amount of analysis has been conducted to demonstrate in isolation the influence of a specific IC element on a firm's financial performance. The study examined whether or not a combined element of IC was related to firms' financial performance proxied by Tobin's Q. Generally, empirical findings, discovered a positive and statically vital impact on Tobin's Q ($\beta 5 = 0.\ 0.14$, p-value = 0.000 that is a smaller amount than $\alpha = 0.05$. In this study, the relation between Value Added Intellectual Capital (VAIC) and financial performance firms listed in Nairobi Security Exchange is explored as empirical evidence. The findings of the study promptly demonstrate that Kenyan security exchange firms can boost their financial performance by using their intellectual capital.

5.2.6 Effect of CEO tenure on firm financial performance

The study investigated whether the tenure of the CEO was related to the financial performance of firms publicly trading in the Nairobi Security Exchange. The results of the study revealed a significant positive influence on Tobin's Q (β=0.04, p-value= 0.000 which is less than α= 0.05). It was therefore concluded that the tenure of the CEO had a positive and significant effect on the financial performance of the firms in the Nairobi Security Exchange. Empirical studies have demonstrated that neither extremely short nor extremely long tenures make a positive contribution to a business ' financial performance (Hambrick & Fukutomi, 1991).

CEOs are obligated to increase corporate profits in their lifetime, while at the same time being constrained by short-term demands on their long-term strategy. Findings from this thesis revealed a positive and significant relationship between the CEO's tenure working for firms in Nairobi Security Exchange in Kenya and their financial performance. The impact on firm performance of the executive's tenure is more uncertain than other features. Studies have suggested that the uncertainty of market participants about the ability of CEOs with tenure that is reduced for certain reasons affect firm financial performance. Ali and Zhang (2015) demonstrated that, by overestimation of earnings, shorter-tenured CEOs tend to adopt more conservative financial reporting practices. Increases in corporate performance would result in longer CEO tenure (Wang *et al*., 2009). Adams, Almeida, and Ferreira (2005) argued that the company normally gains higher power from CEOs with higher tenure.

5.2.7 Moderated effect of CEO tenure

From the data analysis and research findings in chapter four, there was a significant moderating effect of CEO tenure on the relationship between human capital and financial performance of listed firms in the Nairobi Security Exchange (β= -0.12; $\rho<0.05$). The implication is that the longer the CEO serves in a firm the weaker the effect human capital employed on firm performance. Dey and Liu (2011) show, empirically, that CEOs are successful in negotiating less board oversight throughout their tenure.

However, CEO tenure had a significant moderating effect on the relationship between structural capital and firm financial performance (Wald $\chi2$ = 8.656, p= 0.000). This infers that CEO tenure significantly moderates the relationship between structural

capital and firm performance. Therefore, the number of years the CEO has been in position influences the link between structural capital and financial performance.

Besides, the results indicated a significant moderating effect of CEO tenure on the Nairobi Security Exchange relationship between capital employed and financial performance of listed firms (β= 0.01; π<0.05). CEO tenure could increase both financial and physical resources leading to an increase in the financial performance of listed companies in the Nairobi Security Exchange.

Additionally, results indicated a positive and significant moderating effect of CEO tenure on the relationship between innovation capital and financial performance (β=-0.02; ρ<0.05). As CEOs acquire firm-specific knowledge, they emphasize increased investment in innovation which in turn enhances financial performance.

The research findings showed that the interaction term CEO tenure, had a relationship between capital employed and financial performance (β= 0.01; ρ<0.05, Wald $\chi 2$ = 155.770). The results indicated a statistically significant moderating effect of CEO tenure on the relationship between intellectual capital efficiency and financial performance of listed firms in the Nairobi Security Exchange.

Further, the research findings showed that the interaction term CEO tenure had a relationship between Value Added Intellectual Capital (VAIC) and financial performance (β= 0.14; ρ<0.05, Wald $\chi 2$ = 16.75). The results indicated a positive and statistically significant effect on the relationship between Value Added Intellectual Capital efficiency and financial performance of listed firms in the Nairobi Security Exchange.

The organization theory assumes that owners can vary from their workers (Jensen and Meckling, 1976). As a director, the Board's primary role is to monitor and control employees from the viewpoint of an institution. Boards independent of the CEO were considered appropriate. Effective and efficient supervision guarantees the agents behave and enhance company performance in the best interest of investors. Inadequate surveillance can allow agents to seek selfish targets more openly. Flexibility to implement selfish goals can be strengthened by inadequate control. According to organization theories, long-lasting CEOs can become powerful for three reasons (Hill and Phan, 1991; Shen, 2003). First, the CEO's power can improve with tenure as a result of a good performance record. Furthermore, long-lasting CEOs may affect the board structure. The appointment of more new members of the board may be influenced by an expanded CEO, thereby rendering a Board obedient and supportive to the CEO. Third, CEOs will increase their relative power by having control over the process and internal information systems. Informational structures and procedures control that allows CEOs to maintain the relevant information or influence the Board agenda. Theory and data also show that tenured CEOs have a greater impact on the board. The forced turnover of tenured CEOs should thus report exactly what the Board does on behalf of its investors, but it provides bad information about its competences and the future of the company from its coerced turnover of the non-tenured CEOs. Fich (2005) shows the positive reactions of the stock industries to the election of CEOs on the boards.

Fahlenbrach *et al.'s* (2010) findings also dispute the argument that stock prices are sensitive in positive ways if managing directors are named. However, Jackling and Johl (2009) suggest the duality of the CEO seemed to weaken quality in a long-term context. This may result in long-term CEOs being less worried about organizational

growth and less prone to inclusion in their governance structures of an organization's degree governing committee. Decreases in management quality and coordination seem to support the hypothesis that businesses with long-standing CEOs may also become agent-driven. And yet, there could also be further, plausible explanations for the incidence of additional lenient boards among long-tenured CEOs. Next, boards with long-term CEOs may take up the role of board members by taking a further position rather than an agency approach. In other words, boards of long-term CEOs should understand that the CEO is told about the length of his / her time by noninheritable superior corporations. The board, therefore, decides to use this expertise for the benefit of the directors.

5.3 Conclusions of the Study

The theory of agencies assumes that owners might have different preferences from their agents (Jensen and Meckling, 1976). The foremost function of the board, as a fiduciary, is to monitor and control agents' boards with long-term CEOs who may take up the role of board members by taking a further position rather than an agency approach. In other words, boards of long-term CEOs should understand that the CEO is told about the length of his / her time by noninheritable superior corporations. The board, therefore, decides to use this expertise for the benefit of the directors. organization's perspective.

Boards that are independent of the CEO are considered to be optimal. Active and high-quality monitoring ensures that retailers act in the fantastic pursuits of shareholders and improve the performance of the company. Inadequate monitoring may additionally supply more freedom for dealers to pursue egocentric goals. Insufficient supervision can provide greater flexibility for retailers to follow

egocentric goals. Theorists of agencies propose that for three reasons long-tenured CEOs may also grow to be entrenched (Hill and Phan, 1991; Shen, 2003). First, as an end result of an appropriate performance track record, the CEO power may additionally extend with tenure. Second, CEOs who are long-tenured will influence the makeup of the board.

The appointment of new incoming board members could have a long-term effect, resulting in a committed and welcoming board of directors. Fourthly, as CEOs have a leverage of processes and internal data structures, their relative power will increase. CEOs could be allowed to retain the relevant information or control the board's policy on software systems management and procedures. Booting, theory, and evidence would propose a higher board outcome for tenured CEOs. The forced turnover of tenured CEOs should therefore show the accurate information that the Board acts on behalf of the investors but the locked turnover of non-tended CEOs does disclose bad data about his or her competencies and therefore the fortunes of the firm. Fich (2005) provides evidence that inventory markets absolutely react to the appointment of CEOs on boards. In distinction, the study of Fahlenbrach *et al*. (2010) rejects the claim that stock costs react absolutely if CEOs are appointed as directors.

More than that, Jackling and Johl (2009) claim that within the long perspective chief officer duality is perceived to harm performance. This might result in long-term CEOs being less likely to participate significantly in policy formulation and less likely to include the German educational degree board as their governance system neighbourhood. The idea that businesses with long-term CEOs might even be at risk of turning into agents-driven seems reinforced by decreases in the level of research and cooperation. However, even the phenomenon of extremely lenient boards for

long-term CEOs can be plausibly clarified. First, boards of long-term CEOs may take an approach to fulfil the role of the board members, rather than a workplace approach. Boards of long-standing CEOs in many words can see that the CEO has uninherited superior company information about the length of his / her career. The Board also wants to use this information for the benefit of the directors.

5.4 Implications and Recommendations of the study

The study has indicated that human capital had no influence on the financial performance of firms listed at NSE. It is therefore important for firms to engage in selective hiring of employees with higher general skills or formal education. Emphasis also needs to be on investment in training of more specific skills. Besides, firms listed in NSE need to ensure that their human resource has a better understanding of the firms emerging and core business issues to be ahead of the competition.

5.4.1 Theoretical Recommendations

Firstly, the study findings uncovered that Intellectual capital components contribute to firm performance through the moderating role of CEO tenure empirically, which provides new theoretical insights to the content of Agency, Dynamic capability theory, and RBV theories respectively. Second, the study demonstrated that components of intellectual capital contribute to firm performance empirically by the moderating role of CEO tenure, which provides new theoretical insights into the content of Agency, the theory of dynamic capability, and the theory of RBV. To date, the effect of IC on firm performance has been confirmed by several studies (Calantone *et al.* 2002; De Clercq *et al.* 2011; Hitt *et al.* 1997). The influences of

Intellectual capital on firm performance have been widely accepted (Carlucci *et al*. 2004; Hsu and Sabherwal 2011; Longo *et al*. 2009; Phusavat *et al*. 2011; Sharabati *et al*. 2010; Shih *et al*. 2007; Shih *et al*. 2010). However, no study carried out to examine in detail the interconnected mechanisms affecting the relationship between Intellectual Capital, CEO tenure, and firm performance, by disintegrating Structural capital and Innovation capital the current study attempted and achieved that endeavour. The theoretical research model filled this void by confirming the complete moderating role of CEO tenure and showing that human capital, institutional capital, capital employed capital, and innovation capital not only directly enhanced organizational and financial performance but also contributes to firm performance through the CEO tenure indirectly.

Therefore, by testing hypotheses using regression results, this research study extends both the theory of the Agency theory, Resource-based theory, and the Dynamic capability theory. Previous studies have not paid sufficient attention to the moderating effect of CEO tenure on the relationship between intellectual capital and firm performance, particularly in developing economies like Kenya. Model conceptualization extends existing studies that examine firm performance using an empirical approach based on the theory of Agencies, Dynamic capabilities, and Resource-based view theory.

The existing research effort has endeavoured to contribute in several ways to the literature of IC studies. IC results indicated that the sample of listed companies was adequately efficient to enhance firm financial performance from their intellectual resources (both intangible and tangible). Furthermore, the study results reveal the levels of intellectual capital management by a company towards the target efficiency.

These two findings clearly indicate that the selected firms in Nairobi Security Exchange have been able to make efficient use of intellectual capital dimensions over the study period to enhance their financial performance on behalf of their stakeholders.

5.4.2 Policy Recommendations

This will help other researchers to use CT when dealing with different companies since a firm's performance is unique for each company and different competing companies have unique policies on CT based on its performance. The thesis enhances the theoretical understanding of intellectual capital components' influence on financial performance in the Nairobi Securities exchange. This study can be used as a benchmark for and listed firms while evaluating their IC performance.

The current study variables may be of help to scholars and practitioners in evaluating the most influential variable to performance among listed firms in Kenya. It is important to note that previous studies on the effects of intellectual capital components on financial performance have been done in other countries, but this study is done on the Nairobi securities exchange. Although earlier studies explored the direct link between ICE efficiency and financial performance, the moderate effects of CEO tenure (CT) were checked.

The studies show that the impact of human capital on firm performance hurts CEO tenure, according to this theoretical expectation. The Board participates less in decision-making for abstract clarification, when the CEO has more tenure. Markets react positively when the forced turnover of the CEOs has been reported if the prior performance is poor or the Chief Executive has been more tenured and if previous

performance is good or the CEO is less tenured, the forced CEO turnover has also been reported.

This study could benefit policymakers interested in enhancing a company's financial performance, competitive advantage, and long-term growth. Policymakers should consider HC's role throughout the performance of the company. The findings of the study suggested that policymakers should focus on developing listed firms ' IC components if they would like to improve their firm's performance and value creation. The insignificant influence of SCE on a manufacturing firm's performance indicator draws the attention of regulators over immediate proper utilization of internal resources, corporate processes along with investment in the research and development.

5.4.3 Practical Recommendations

The practical implications that this study can provide are discussed as follows. The relationship between different intellectual capital elements provides a guide on how firms in developing countries can enhance their performance in a competitive environment. Equally, it is essential for owners/managers to monitor the intellectual resources of Nairobi Security Listed firms closely, as it is a source of greater competitive advantage in financial performance and long-term organizational survival. For both academic researchers as well as business professionals, the contribution of this study is important. IC literature helps determine the future role of IC usefulness in the success of an organization: the benefit of business professionals by recognizing the value of allocating their valuable capital to promote IC and eventually the financial performance of the company.

Second, the results highlighted the importance of CEOs' tenure in fostering strategic flexibility in the deployment of intellectual capital components in tandem with the shifting operating environment to impact on firm performance. The results guide CEOs and firm stockholders of listed firms in NSE Kenya on how to maximize firm performance. CEOs are powerful and the entire company can be influenced by their decisions. In that sense, as CEO tenure increases, the current study helps practitioners develop a greater view of stakeholder relationships. For example, CEOs may help create structures that facilitate company-employee and company-customer relationships to establish competitive advantages, thus improving company returns and decreasing uncertainty in those returns. Besides, the resource-based theory posits that specific intellectual capital and partnerships increase the efficiency of the organization. Customer partnerships can be a powerful opportunity and direction for the tenure of CEOs to impact financial returns.

5.4.4 Methodological Contributions

Managers of listed firms at NSE can apply the MVAICTM method to calculate the company's IC efficiency and compare it against the competitor(s) MVAICTM in the industry. It can also be used to report in the financial statements as a potential measure of IC efficiency. Additionally, investors can use the MVAICTM method to select companies having consistent value creation efficiency for investment purposes. For better economic policies and management of the economy, regulatory agencies can use MVAICTM to evaluate companies in respect of value creation from the investment in intellectual capital.

On the other hand, if a variety of IC variables supplement the intangible asset, a performance increase would be obtainable (Rothaermel & Hess 2007). In short, a

multidimensional and systematic definition of IC components allows managers to overcome IC inefficiency (Edvinsson and Sullivan, 1996) and provide a rigorous IC assessment, compilation, and quality process (Molnar, 2004). This study adds to the IC body of knowledge, and it is among the first to study IC dimensions relationship with firm financial performance (Tobin's Q) in Nairobi Security Exchange by disaggregating IC structural and Innovation capital components respectively.

5.4.5 Contextual Recommendations

The finding's conceptual implications suggest that some resources, or clusters of resources, maybe ' universally' essential. Nonetheless, more research is needed to decide whether the tools found to be relevant in this study extend to other contexts, such as Listed companies in East Africa or, in particular, in the continent of Africa.

This research offers empirical evidence that IC dimensions affect the company's financial performance and also be an important factor in the asset generation and capital development of investors, management needs to understand the significance of IC dimensions and its essential role in the company financial position and it places global competitiveness and value creation for the investors.

5.5 Recommendations for future research

It is suggested that future research be echoed with previous research and fill the limitations of previous research, particularly to broaden the scope of IC research. Nevertheless, it is important to focus on modifying VAICTM to accommodate additional elements of intellectual capital to address further research gaps.

More than one indicator of financial performance, including capital gain (ROE), the market-to-book price ratio (M / B), and asset returns (ATO), can be used for the analysis of the effect of IC in future studies on the East African Securities Exchange too. In this report, the research was based entirely on IC information of the listed Nairobi Security Exchange firms. Consequently, work in the future might use data from various countries and sectors, which would concentrate on the IC to provide additional evidence on the impact of IC on the company's financial results.

First and foremost, further research needs to be done as the effect of human capital on firm financial performance was minimal. Additionally, only secondary data from annual reports are used by the study. It is therefore recommended that the research can be extended longitudinally in future researchers based on the website of the organization or a questionnaire that is preferred to obtain more detailed information on a particular topic.

Future studies can, therefore, include all non-listed companies operating in the finance sector and refer to other methods of assessing financial firms ' intellectual capital output. Ultimately, further analysis must be carried out using more variables (i.e. market-to-book ratio and balanced scorecard) that may apply to this research as no proof of firm financial performance is entirely dependent on the four variables. Therefore, the foregoing study will constitute an important reference point for future studies. More research is needed to determine whether mediation occurs and whether moderate mediation exists in this field of study. This will bring research in this field the latest level of interrogation.

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APPENDICES

APPENDIX I: DOCUMENT ANALYSIS GUIDE

FOR THE YEAR 2006- 2016

Name of NSE Firm	*VA_i = OUTPUT – INPUT*	HCE_i = VA_i/ HC_i	SC = VAi- HC_i	SCE_i = SC_i/VA_i	CEE_i=VAi/ CE_i	$INCE_i$ =INC/ VA	$MVAIC^{TC}$ = CEE_i+ HCE_i+SCE_i+ INCE	CEO tenure	Topin q

APPENDIX II: LISTED COMPANIES IN 2017

AGRICULTURAL

1. Eaagads Ltd.
2. Kapchorua Tea Co. Ltd.
3. Kakuzi
4. Limuru Tea Co. Ltd.
5. Rea Vipingo Plantations Ltd.
6. Sasini Ltd.
7. Williamson Tea Kenya Ltd.

AUTOMOBILES & ACCESSORIES

8. Car & General (K) Ltd.
9. Sameer Africa Ltd.
10. Marshalls (E.A) Ltd.

BANKING

11. Barclays Bank Ltd.
12. CFC Stanbic Holdings Ltd.
13. I & M Holdings Ltd.
14. Diamond Trust Bank Kenya Ltd
15. HF Group Ltd.
16. KCB Group Ltd.
17. National Bank of Kenya Ltd.
18. NIC Bank Ltd
19. Standard Chartered Bank Ltd.
20. Equity Group Holdings
21. The Co-operative Bank Ltd

COMMERCIAL & SERVICES

22. Express Ltd
23. Kenya Airways Ltd.
24. Nation Media Group
25. Standard Group Ltd.
26. TPS Eastern Africa (Serena) Ltd.
27. Scangroup Ltd.
28. Uchumi Supermarkets Ltd.
29. Hutchings Biemer Ltd.
30. Longhorn Publishers Ltd.
31. Atlas Development and Support Services
32. Deacons (East Africa) Plc
33. Nairobi Business Ventures Ltd.

CONSTRUCTION & ALLIED

34. Athi River Mining
35. Bamburi Cement Ltd.
36. Crown Berger Ltd
37. E.A Cables Ltd.
38. E.A Portland Cement Ltd.

ENERGY & PETROLEUM

39. Kenol Kobil Ltd.
40. Total Kenya Ltd.
41. KenGen Ltd.
42. Kenya Power & Lighting Co. Ltd.
43. Umeme Ltd

INSURANCE

44. Jubilee Holdings Ltd
45. Pan Africa Insurance Holdings Ltd.
46. Kenya Re- Insurance Corporation Ltd.
47. Liberty Kenya Holdings
48. Britam Holdings Ltd.
49. CIC Insurance Group Ltd.

INVESTMENT

50. Onlympia Capital Holdings
51. Centum Investment Co. Ltd.
52. Trans- Century ltd.
53. Home Afrika Ltd
54. Kurwitu Ventures
55. Nairobi Securities Exchange Ltd.

MANUFACTURING & ALLIED

56. B.O.C Kenya Ltd
57. British American Tobacco kenya Ltd.
58. Carbacid Investments Ltd
59. East African Breweries Ltd.
60. Mumias Sugar Co. Ltd
61. Unga Group Ltd.
62. Eveready East Africa Ltd.
63. Kenya Orchards Ltd.
64. A. Baumann Co. Ltd
65. Flame Tree Group Holdings Ltd.

TELECOMMUNICATION & TECHNOLOGY

66. Safaricom Ltd.

REAL ESTATE INVESTMENT TRUST

67. Stanlib Fahari I-REIT

APPENDIX III: LISTED OF FIGURES

Fig 4.1: Normal Q-Q Plot for Financial Performance

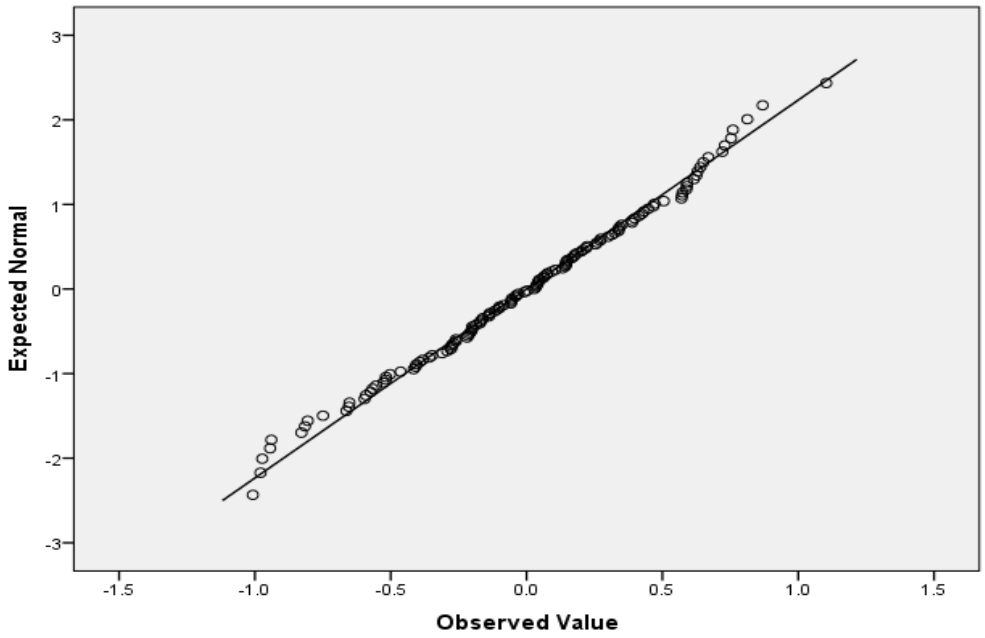


Fig 4.2: Histogram for Financial Performance

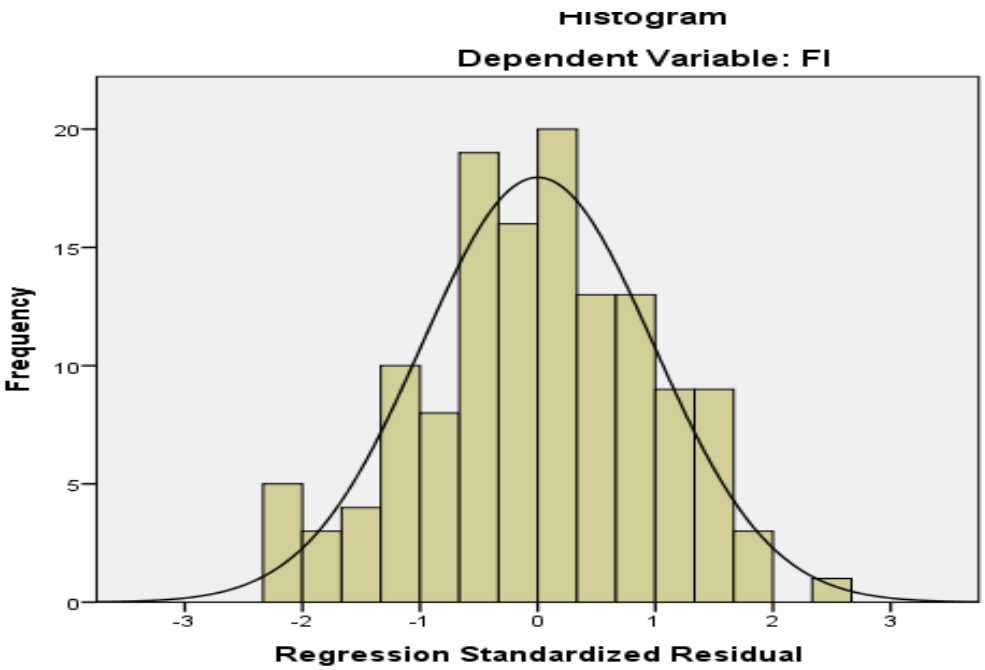
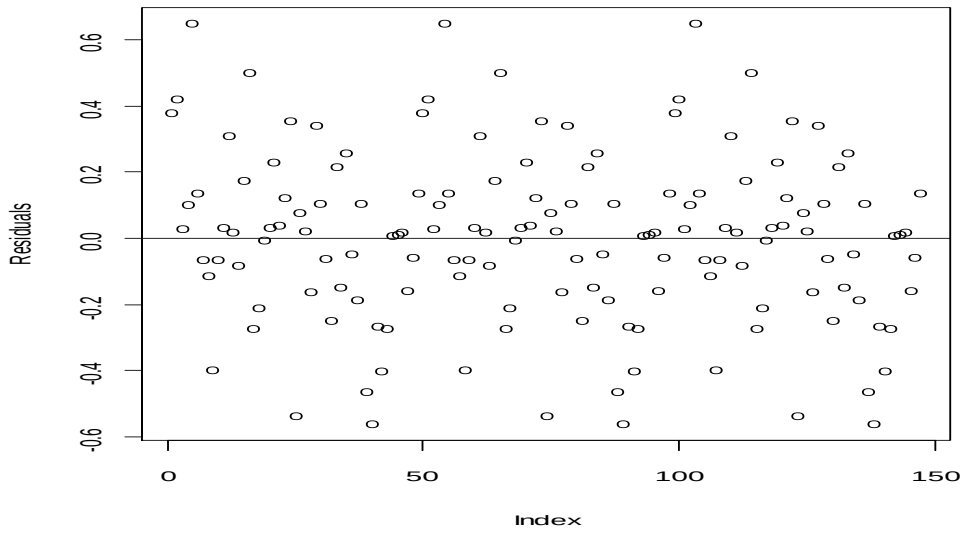


Fig 4.3: Durbin Watson Statistics- Independence of Residual



APPENDIX IV: UNIVERSITY RESEARCH AUTHORIZATION

MOI UNIVERSITY
SCHOOL OF BUSINESS AND ECONOMICS

Tel: (0321) 43620
Fax No: (0321) 43360
Telex No.35047 MOIVARSITY

Box 3900
Eldoret
KENYA

RE: SBE/ PHD/BM/10/11

DATE: 13th September, 2018

TO WHOM IT MAY CONCERN

RE: STEPHEN KIMUTAI CHELOGOI – SBE/ PHD/BM/010/11

The above named is a bonafide student of Moi University School of Business and Economics, undertaking a Doctor of Philosophy in Business Management degree, specializing in Finance.

He has completed coursework, defended his proposal, and is proceeding to the field to collect data for his research titled: *"Effect of Intellectual Capital, CEO Tenure on Financial Performance of Firms Listed in Nairobi Securities Exchange"*.

Any assistance accorded to him will be highly appreciated.

Yours Faithfully,

DEAN
School Of Business and Economics
MOI UNIVERSITY

DR. JOEL TENAI
AG. DEAN, SCHOOL OF BUSINESS AND ECONOMICS

APPENDIX V: NACOSTI RESEARCH AUTHORIZATION

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471, 2241349,3310571,2219420
Fax:+254-20-318245,318249
Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/18/12540/25602**

Date: **4th October, 2018**

Stephen Kimutai Chelogoi
Moi University
P.O Box 3900-30100
ELDORET

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Effect of intellectual capital, CEO tenure on the financial performance of firms listed in Nairobi Securities Exchange"*** I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **3rd October, 2019.**

You are advised to report to **the County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

APPENDIX VII: NACOSTI RESEARCH PERMIT

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014.

CONDITIONS

1. **The License is valid for the proposed research, location and specified period.**
2. **The License and any rights thereunder are non-transferable.**
3. **The Licensee shall inform the County Governor before commencement of the research.**
4. **Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies.**
5. **The License does not give authority to transfer research materials.**
6. **NACOSTI may monitor and evaluate the licensed research project.**
7. **The Licensee shall submit one hard copy and upload a soft copy of their final report within one year of completion of the research.**
8. **NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice.**

National Commission for Science, Technology and innovation
P.O. Box 30623 - 00100, Nairobi, Kenya
TEL: 020 400 7000, 0713 788787, 0735 404245
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Website: www.nacosti.go.ke

REPUBLIC OF KENYA

National Commission for Science, Technology and Innovation

RESEARCH LICENSE

Serial No.A 20869

CONDITIONS: see back page

THIS IS TO CERTIFY THAT:
MR. STEPHEN KIMUTAI CHELOGOI
of MOI UNIVERSITY, 7256-30100 ELDORET,has been permitted to conduct research in *Nairobi County*

on the topic: *EFFECT OF INTELLECTUAL CAPITAL, CEO TENURE ON THE FINANCIAL PERFORMANCE OF FIRMS LISTED IN NAIROBI SECURITIES EXCHANGE.*

for the period ending:
3rd October,2019

Permit No : NACOSTI/P/18/12540/25602
Date Of Issue : 4th October,2018
Fee Recieved :Ksh 2000

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation