

**INTELLECTUAL CAPITAL, FIRM INNOVATION AND FINANCIAL  
PERFORMANCE OF INSURANCE FIRMS IN KENYA**

**BY**

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## DECLARATION

### Declaration by Candidate

This thesis is my original work and has not been presented for the award of a degree in this or any other University.

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**DEDICATION**

This work is dedicated to my beloved husband Julius Kiprop Maiyo and our two lovely children, Berur and Chebaibai.

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## ABSTRACT

Business environment has changed considerably in past few decades. As a result, competition is the main characteristic in every industry. Intellectual capital along with firm's innovativeness has been considered as the main catalyst in firms' financial performance. Intellectual capital has also been considered an ingredient in firm's ability to engage in innovation. However there is need to understand if firms using intellectual capital view it as a critical asset in firm innovation resulting to financial performance. The purpose of this study is to examine the mediating effect of firm innovation on the relationship between intellectual capital and financial performance of insurance firms in Kenya. The objectives of the study is to establish the effect of human capital on financial performance, to determine the effect of social capital on financial performance, to find out the effect of organizational capital on financial performance, to determine the mediating effect of firm innovation on human capital and financial performance, to determine the mediating effect of firm innovation on social capital and financial performance and to determine the mediating effect of firm innovation on organization capital and financial performance. The study was anchored on balanced score card approach, which states that firms should not only focus on financial measures but also non-financial measures of the firm matters. Resource based view theory guided the study by looking at a firm as a bundle of resources which determines firms capability to innovate. Out of 47 registered insurance firms, 42 firms were sampled using Yamane (1978) formula. The respondents were 3 heads of sections and 6 operations managers from each of the 42 insurance firms selected using purposive sampling technique giving a sample size of 378 respondents. This was considered an appropriate technique because they are the right persons to give information on intellectual capital, firm innovation and financial performance of insurance firms. The study used structured questionnaires with a seven point Likert scale. Using Structural Equation Modeling, the study found that human capital ( $\beta = .308, \rho < .05$ ), social capital ( $\beta = .858, \rho < .05$ ) and organization capital ( $\beta = .035, \rho < .05$ ), had a positive and significant effect on financial performance of insurance firms. Further firm innovativeness was found to mediate partially the relationship between human capital and financial performance ( $\beta = .215, \rho < .05$ ), social capital and financial performance ( $\beta = .728, \rho < .05$ ) and organization capital and financial performance, ( $\beta = .701, \rho < .05$ ). The findings agreed with resource based view theory that intellectual capital resources that include, human capital, social capital and organisation capital are crucial for financial performance of insurance firms. Results indicate the important role of innovation as a mediating variable in that when firms innovate it results into human capital, social capital and organisation capital increasing the financial performance of insurance firms.

## TABLE OF CONTENTS

DEDICATION .....	iii
ACKNOWLEDGEMENT .....	iv
ABSTRACT .....	v
TABLE OF CONTENTS.....	vi
LIST OF TABLES .....	x
LIST OF FIGURES .....	xi
ABBREVIATIONS .....	xii
OPERATIONAL DEFINITION OF TERMS .....	xiii
<b>CHAPTER ONE .....</b>	<b>1</b>
<b>INTRODUCTION.....</b>	<b>1</b>
1.0 Overview .....	1
1.1 Background of the Study.....	1
1.1.1 Kenyan Context .....	4
1.2 Statement of the Problem .....	7
1.3 Objectives of the Study .....	9
1.3.1 General Objective .....	9
1.4 Hypotheses of the Study.....	10
1.5 Significance of the Study .....	10
1.6 Scope of the Study.....	11
<b>CHAPTER TWO .....</b>	<b>13</b>
<b>LITERATURE REVIEW .....</b>	<b>13</b>
2.0 Introduction .....	13
2.1 Concept of Financial Performance.....	13
2.2 Concept of Intellectual Capital.....	17
2.2.1 The Concept of Human Capital .....	20
2.2.2 The Concept of Social Capital.....	21
2.2.3 The Concept of Organization Capital.....	23
2.3 Concept of Innovation.....	25
2.4 Theoretical Perspectives.....	27

2.4.1 Balance Score Card Approach.....	27
2.4.2 Resource Based View Theory .....	30
2.4.3 Human Capital Theory .....	32
2.5 Effect of Human Capital on Financial Performance .....	34
2.6 Effect of Social Capital on Financial Performance .....	41
2.7 Effect of Organizational Capital on Financial Performance .....	45
2.8 Mediating Effect of Firm Innovation on the Relationship between Human Capital and Financial Performance .....	46
2.9 Mediating Effect of Firm Innovation on the Relationship between Social Capital and Financial Performance.....	50
2.10 Mediating Effect of Firm Innovation on the Relationship between Organizational Capital and Financial Performance .....	53
2.11 Conceptual Framework .....	56
<b>CHAPTER THREE .....</b>	<b>58</b>
<b>RESEARCH METHODOLOGY .....</b>	<b>58</b>
3.0 Introduction .....	58
3.1 Research Philosophy .....	58
3.2 Research Design .....	59
3.3 Target Population .....	60
3.4 Sampling Design and procedures .....	60
3.5 Data Types, Collection and Procedures .....	61
3.5.1 Types of data .....	61
3.5.2 Data Collection Instrument.....	62
3.6 Measurements of Variables .....	63
3.6.1 Financial performance.....	63
3.6.2 Human Capital.....	63
3.6.3 Social Capital .....	64
3.6.4 Firm innovation .....	65
3.7 Validity and Reliability of the Research Instrument .....	65
3.7.1 Validity of the Research Instrument.....	65
3.7.2 Reliability of the Research instrument .....	67

3.8 Data Analysis and presentations .....	68
3.10 Ethical Considerations.....	69
<b>CHAPTER FOUR.....</b>	<b>70</b>
<b>DATA ANALYSIS, PRESENTATION AND INTERPRETATION .....</b>	<b>70</b>
4.1 Introduction .....	70
4.2 Response Rate .....	70
4.3 Data Screening and Cleaning .....	71
4.3.1 Examination of missing data .....	71
4.3.2 Examination for Outliers .....	72
4.4 Descriptive Analysis for Independent, Mediating and Dependent Variables .....	73
4.4.1 Financial Performance.....	74
4.4.2 Human Capital.....	75
4.4.3 Social Capital.....	76
4.4.4 Organization Capital.....	79
4.4.5 Firm Innovation .....	80
4.5 Reliability Analysis .....	82
4.6 Factor Analysis for Testing Validity of the Constructs.....	83
4.6.1 Factor Analysis for Human Capital .....	84
4.6.2 Factor Analysis for Social Capital.....	84
4.6.3 Factor Analysis for Organization Capital .....	85
4.6.4 Factor Analysis of Firm innovation.....	86
4.6.5 Factor Analysis of Financial performance .....	87
4.7 Confirmatory Factor Analysis (Measurement Model) .....	88
4.8 Test of Assumptions.....	90
4.8.1 Normality.....	91
4.8.2 Linearity.....	93
4.8.3 Homoscedasticity.....	94
4.8.4 Multicollinearity .....	95
4.9 Correlation Analysis of the Variables .....	97
4.10 Testing of Hypotheses .....	99



4.11 PLS-SEM for Mediating Effect of Innovation on Intellectual Capital and Financial Performance .....	103
<b>CHAPTER FIVE .....</b>	<b>111</b>
<b>SUMMARY, CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>111</b>
5.1 Introduction .....	111
5.2 Summary of Findings .....	111
5.3 Conclusion.....	115
5.4 Recommendation of the Study .....	118
5.4.1 Policy Recommendation.....	118
5.4.2 Recommendation to Insurers .....	118
5.5 Recommendation for Further Studies .....	120
REFERENCES .....	122
APPENDICES .....	150
Appendix I: Questionnaire .....	150
Appendix II: List of Insurance Firms and Number of Employees .....	153
Appendix III: Graphical Plots .....	155
Appendix IV: Research Permit .....	160

## LIST OF TABLES

Table 4.1: Response Rate Questionnaire .....	71
Table 4.2: Multivariate Outlier Test Results.....	73
Table 4.3: Financial Performance .....	75
Table 4.4 Human Capital .....	76
Table 4.5: Social Capital.....	78
Table 4.6: Organization Capital.....	80
Table 4.7: Firm Innovation .....	81
Table 4.8: Reliability Analysis .....	83
Table 4.9 Factor Analysis for Human Capital .....	84
Table 4.10: Factor Analysis of Social Capital .....	85
Table 4.11: Factor Analysis of Organization Capital .....	86
Table 4.12: Factor Analysis of Firm innovation.....	87
Table 4.13 Factor Analysis of Financial performance.....	88
Table 4.14 Confirmatory Factor Analysis Results.....	89
Table 4.15 Test for Normality for the Variables.....	92
Table 4.16 Linearity Tests .....	94
Table 4.17 Levene’s Test for Homoscedasticity.....	95
Table 4.18 Collinearity statistics.....	97
Table 4.19 Correlation Analysis of the Variables.....	99
Table 4.20 Estimates of Effect of Intellectual Capital on Financial Performance in Insurance Firms.....	100
Table 4.21 Estimates of mediating effect of Firm Innovation on the relationship between Intellectual Capital and Financial Performance .....	104

## LIST OF FIGURES

Figure 4.1: Model Measurement.....	90
Figure 4.2 Histogram with normal distribution .....	155
Figure 4.3 Normal P plots.....	156
Figure 4.3 SEM for Effect of Intellectual Capital on Financial Performance .....	102
Figure 4.4 SEM for mediating effect of firm innovation on human capital -Financial Performance relationship .....	106
Figure 4.4 Scatterplots showing linear and curvilinear relationships with standardized residuals by predicted values. ....	157
Figure 4.5 Boxplot with variables at similar levels .....	158
Figure 4.5 SEM for mediating effect of Firm Innovation on Social Capital-Financial Performance Relationship.....	108
Figure 4.6 SEM for mediating effect of Firm Innovation on Organizational Capital- Financial Performance Relationship.....	110

**ABBREVIATIONS**

AKI:	Association of Kenyan Insurance
FP:	Financial Performance
HC:	Human Capital
IC:	Intellectual Capital
IP:	Innovation Performance
IRA:	Insurance Regulatory Authority
RBV:	Resource Based View
RC:	Relational Capital
SC:	Structural Capital

## OPERATIONAL DEFINITION OF TERMS

**Financial Performance:** it refers to the profitability of a business enterprise measured through return on investment, return on assets, return on equity, profit margin, earnings per share and total sales growth (Luo *et al.*, 2012).

**Human capital:** refers to knowledge and skills that individuals acquire through education or personal experience/skills (Odhong *et al.*, 2014).

**Innovation:** refers to a new product or service, a new production process technology, a new structure, or a new plan or program pertaining to organizational members (Schumpeter, 1934).

**Intellectual Capital:** refers to the sum of knowledge i.e human capital, social capital and organizational capital that an organization is able to leverage in the process of conducting business to gain competitive advantage (Afroze, 2011; Youndt *et al.*, 2004)).

**Organizational Capital:** refers to institutionalized knowledge and codified experience manifested in organization manuals, databases and patents (Dess & Picken, 1999).

**Social capital:** refers to the sum of the actual and potential resources embedded within, available through and derived from the network of relationships possessed by an individual or social unit (Musimba, 2012).

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.0 Overview**

This chapter presents background of the study, statement of the problem, research objectives, hypotheses, significance and scope of the study.

#### **1.1 Background of the Study**

The heightened competition in global and domestic markets has necessitated firms to adopt measures targeted at improving their overall financial performance. This has mainly been attributed to the fact that the health and survival of firms' is dependent on their financial performance (Iswatia & Anshoria, 2007). Various studies have explained the drivers of firm performance (Hawawini *et al.*, 2003; Safarova, 2010; Lazzolino *et al.*, 2015; Saedi *et al.*, 2015; Tontalo and Priem, 2016), however, recent studies have cited intellectual capital resources as fundamental in creating firm value and attaining an edge over competitors (Maditinos, *et al.*, 2011). Khan *et al.*, (2014) noted that most organizations are focusing more on physical assets to increase the financial performance to the exclusion of intangible asset. On the other hand, Kamath (2010) was of the opinion that firms that tend to have high intellectual capital levels outperform those without.

In an organization set up, intellectual capital comprises of the knowledge inherent among the employees, the day to day procedures that the said employees engage in and the networking dealings within the organization (Afroze, 2011; Kong, 2008). Also, intellectual capital comprises of three forms of intangible assets which are; human capital, organizational capital and social capital (Youndt *et al.*, 2004). It is the sum of all knowledge

that an organization is able to leverage in the process of conducting business to gain competitive advantage (Mavridis and Kyrmizoglou, 2005; Wall, 2007; Ruta, 2009; Maditinos *et al.*, 2011). Scholars argue that continuous advantage occur in situations where physical, human, and organizational capital varies across the firms and where some firms may not be able to obtain required resources that are useful to other firms (Meihami *et al.*, 2014).

Tarus and Sitienei (2015), noted that firms' capital in the nature of intellectual capital is an important component in firms' capability to participate in innovation. The distinguishing ability of the company can be looked at as the result of intellectual capital within the firm (Zerenler *et al.*, 2008) and firm's knowledge assets which connect to the level of innovation (Thornhill, 2006). Rodrigues *et al.*, (2015) reasoned that innovation and its intangible antecedents are essential to understand innovation-driven economic growth. Additionally, intangible assets show most significant influence on innovation and performance than physical ones (Bueno *et al.*, 2010). Hence, when a company has additional intellectual capital, it would generate improved innovation performance. In other words, when a company has more intellectual capital, it would partake more innovative activities resulting to increased product development performance.

Nowadays, it is important to link intellectual capital with innovation and value creation process through intellectual capital driven innovation (Zambon and Monciardini, 2015). Although, the organization capability to innovate relies on its ability to exploit intellectual assets effectively, innovation is acknowledged as driving element to influence the value creation and performance of firms (Griffith *et al.*, 2006). Firms' capability to get

sustainable performance outcomes are based on their innovative performance through leveraging, grasping and reconfiguring intellectual capital appropriately (Hsu and Wang, 2012). Though previous research has investigated the role of intellectual capital in improving organization performance (Sharabati *et al.*, 2010) and how firms' innovation could be the result of better firms' performance (Huang *et al.*, 2010) there is scarcity of literature on how firm innovation mediates the link between intellectual capital and firm performance.

Despite the fact that several researches on intellectual capital and firm innovation have been put in place (Ahuja, 2000; Subramaniam & Venkatraman, 2001), and intellectual capital and firm performance considered in different firms (Allam, 2018), firm innovation as mediating variable has been largely ignored yet innovation is acknowledged as driving element to influence the value creation and performance of firms (Griffith *et al.*, 2006). Consequently, there is a need to measure firm innovation as a mediator on the relationship between intellectual capital and the firm performance. Weerawardena (2006) suggested that, when organizations have ability to innovate they will be in a position to provide solutions to satisfy their customer needs hence improve its performance. Innovation is seen as a necessity and a vital resource for firm's growth (Murjan, 2012; Roseburch *et al.*, 2011).

Although many studies have tested how intellectual capital affects firm outcomes such as performance ( Allam, 2018), sustainability ( Ekanem, 2017)), competitiveness ( Hayel, 2017; Rehman *et al.*, 2011), still there is a general gap in appreciating if the firms investing and using intellectual capital view it as a critical asset in firm innovation. Consequently, there is still a need to measure intellectual capital of the firm and its influence on firm innovation, so the firm can become more conscious of the point that investments on



intellectual capital are essential to innovate the organizational processes, structures and products for greater performance outcomes (Marr *et al.*, 2004; Gao *et al.*, 2009). More so, studies providing the relationship between intellectual capital and firm innovation are not a clear in literature since they have produced mixed results (Tarus and Sitienei, 2015). Some studies have reported positive results (Ahuja, 2000; Subramaniam & Venkatraman, 2001) while others have reported negative results (Subramaniam & Youndt, 2005; Campanella *et al.*, 2014). In context of above stated background, the current study explores the mediating role of firm innovation on the relationship between intellectual capital and financial performance of insurance firms in Kenya.

### **1.1.1 Kenyan Context**

Kenya's development strategy is built on four pillars, where one of them is to invest in intellectual capital, therefore, strengthening the quality and exploiting the productive use of Kenya's intellectual capital (Thugge *et al.*, 2008). In the face of concentrated globalized rivalry, there is a widespread acknowledgement that intellectual capital is critical force that energizes economic growth (Huang & Liu, 2005). Intellectual capital comprises of three forms of intangible assets which are; human capital, organizational capital and social capital (Youndt *et al.*, 2004).

According to Global Human Capital Index (GHCI), Kenya has been ranked at position 78 out of 130 (GHCI, 2019). The report used indices such as capacity, deployment, development and know-how to determine the scores for different countries in relation to human capital. The score was attributed to Kenya's strong educational quality and good medium skilled employment sector which is key indicators to potential investment in workforce. Insurance firms in Kenya are dependent on human capital attributes such as

skills, knowledge and experiences for higher performance and long term competitive advantage (Munjuri *et al.*, 2015). On the other hand, Social capital has been reported as a key driver of sales performance, especially in knowledge intensive contexts (Ustuner, 2005). With the rise of the networked economy, building social capital across networks becomes critical (Lesser, 2000). Insurance firms strive at increasing their social networks, social skills, and social identity in order to enhance performance and increase their competitive advantage.

Organizational capital comprises the organizational routines, procedures, systems, cultures, databases, this includes organizational flexibility, a documentation service, the existence of a knowledge Centre, the general use of Information Technologies, organizational learning capacity, etc. The principal role of organizational capital is to link the resources of the organization together into process that creates value for customers and sustainable competitive advantage for the firm (Dess & Picken, 1999). Insurance firms in Kenya strive to manage organizational capital through appropriate storage of institutionalized knowledge and codified experiences in database, routines, structures and making it readily available for members in the firm, thus, enabling the firms to utilize the knowledge and act towards successful performance.

It is widely recognized that the innovative competence of a firm depends very closely on the intellectual assets and knowledge it possesses, as well as on its ability to use them, viewing the innovation procedure as an intensive knowledge management process (Mention, 2012). The Global Innovation Index (GII) ranked Kenya at position 78 globally in 2018, which is the third highest ranking in Africa (GII, 2018). This was attributed to innovation linkages and transfer of creative services among others. One of the most notable

innovations in the Kenyan financial sector is the roll out of mobile phone financial services. Cruz *et al.*, (2010) pointed out that mobile banking caters for financial transactions using mobile devices. The insurance sector is no exception to such progresses, with opportunities of new methods of service provision as well as greater chances for data collection and fraud detection that can lead to better risk identification and mitigation measures, which are being referred to as “Insure-Tech”.

Over the years, the insurance industry in Kenya has worked hard at reclaiming its rightful image through embracing new strategies that can enable the industry gain competitive advantage. Insurance firms compete for a limited market characterized by low penetration. Kenyans' uptake of insurance cover, both at corporate and personal level, remains predominantly in the motor, fire, industrial and personal accident (mainly group medical cover) classes. This illustrates a poor attitude towards personal insurance cover in general. With the debt crisis in 2011, there was a notable drop in the overall premiums, a rise in claims and a decline in investment income. The gross direct premium income dropped from 25% in 2010 to 18% in 2011 (IRA, 2011). This forced companies, especially those transacting in non-life business to change their strategies in order to increase performance and gain competitive advantage (IRA, 2011).

Insurance firms have consequently turned their attention on innovation to allow them respond to, and compete efficiently in the market. Some insurance companies in Kenya have adopted several distinctive features to counter competition and elevate them among other industry players. The use of technology, especially the mobile phone to disseminate information and facilitate premium and claim payments is particularly an area of interest to insurance companies. Other insurance companies have tailored certain products and

services to encounter the individual needs of their clients, as well as being open to new channels of distribution of insurance like banc assurance that bring them closer to their target markets (AKI, 2014). With the spread of smart phones and other software tools in a number of insurance companies in Kenya, services to clients can be delivered through apps. Data technology has enabled insurance firms to have many sources from where they can collect data and help create personalized products. Technologies such as Internet of Things and others provide and modify business models for competitive advantage. For example, data captured through internet of things can help define insurance industry's transformation in lines of underwriting policies and risk management procedures.

Despite the competitive intellectual capital and good innovations that can explain growth in insurance sector in Kenya, there have been unexpectedly few empirical studies in the effect of firm innovation on intellectual capital and firm performance of insurance firms in Kenya. This state has deprived insurance firms the much required information concerning this important area of intellectual capital and firm innovations sometimes leading to contrary association in the intellectual capital- innovation relationship and thus the need for this study. Further, attempts to integrate research on intellectual capital, innovation and financial performance are rare. Based on this, examining the link between firm innovation, intellectual capital and financial performance in insurance companies in Kenya can thus be considered a topical issue, thus the need for this study.

## **1.2 Statement of the Problem**

Intellectual capital has been claimed to be a significant ingredient which influences organizations in areas of great importance to their survival. Although many studies have

tested how intellectual capital affects firm outcomes (Amir and Lev, 1996; Wen-Ying, Chang, 2005; Rehman *et al.*, 2011, Rodrigues *et al.*, 2015; Santos-Rodrigues *et al.*, 2011; Damijan *et al.*, 2012), this empirical evidences are inconclusive and far from achieving a solid consensus. Further studies providing the relationship between intellectual capital and firm innovation (Ahuja, 2000; Subramaniam and Venkatraman, 2001) are not a priori clear in literature, because, the few studies in this area have produced mixed results (Tarus and Sitienei, 2016).

It is no doubt that high performing companies tend to be those that continually innovate, relying on new technologies and emphasizing on skills and knowledge of their employees rather than assets such as plant and machinery (Muhammad, 2009). Highly innovative firms perform well (Jimenez and Sanz-Valle, 2011; Bell, 2005; Cho and Pucik, 2005) and have sustainable competitive advantage (Standing and Kiniti, 2011; Bartel and Garud, 2009; Johannessen, 2008). To spur innovation, firms must have intellectual capital that is valuable, rare, imitable and non-substitutable (Tarus and Sitienei, 2015). This study argues that if insurance firms in Kenya exploit intellectual capital effectively there is high chance they might improve their innovativeness, hence enhancing financial performance of insurance firms.

In 2009, the Kenyan insurance industry recorded a growth rate of 2.84% as compared to South Africa whose growth rate was at 12.9% (AKI 2009). It was also noted that only 6.8% of Kenyan population had purchased insurance cover with 91% never having embraced insurance cover (National Financial Access Survey 2009). In regard to this insurance firms in Kenya have to come up with strategies on how to have a high financial performance.

Firms' capability to get sustainable performance outcomes are based on their innovative performance through leveraging, grasping and reconfiguring intellectual capital appropriately (Hsu and Wang, 2012). Though previous research has concluded that firms' innovation could be the result of better firms' performance (Huang *et al.*, 2010) there is scarcity of literature on how firm innovation mediates the effect of intellectual capital on firm performance

### **1.3 Objectives of the Study**

#### **1.3.1 General Objective**

The purpose of this study was to examine the mediating effect of firm innovation on intellectual capital and financial performance of insurance firms in Kenya. To pursue this study eight specific objectives were formulated as follows:

- 1) To determine the effect of human capital on financial performance
- 2) To examine the effect of social capital on financial performance
- 3) To investigate the effect of organizational capital on financial performance
- 4) a) To determine the mediating effect of firm innovation on human capital and financial performance
- b) To determine the mediating effect of firm innovation on social capital and financial performance
- c) To determine the mediating effect of firm innovation on organizational capital and financial performance

## **1.4 Hypotheses of the Study**

**H<sub>o1</sub>:** There is no significant effect of human capital on financial performance

**H<sub>o2</sub>:** There is no significant effect of social capital on financial performance

**H<sub>o3</sub>:** There is no significant effect of organizational capital on financial performance

**H<sub>o4a</sub>:** There is no significant mediating effect of firm innovation on human capital and financial performance

**H<sub>o4b</sub>:** There is no significant mediating effect of firm innovation on social capital and financial performance

**H<sub>o4c</sub>:** There is no significant mediating effect of firm innovation on organizational capital and financial performance

## **1.5 Significance of the Study**

Insurance firms and other organizations in Kenya benefits from the study findings in strengthening the understanding of the importance and benefits of intellectual capital on firm innovation. The study provides knowledge on how each of the three intellectual capitals in the study affects firm innovation. This is significant to management of the firms on how and which intellectual capital to employ in order to achieve high firm innovation.

Owners and managers of insurance companies need to pay keen interest in translating their available intellectual capital resources into the development of new products new processes and new markets to improve financial performance of their companies.

Kenyan government policy makers can get the benefit for its economy from understanding the influence of intellectual capital investments in generating economic growth through improving insurance firms' innovation and financial performance. They can use this study as a basis in conducting studies in other sectors of the Kenyan economy in order to improve the knowledge on how intellectual capital is used to boost economic growth. The findings will help Ministries in charge of insurance companies and government agencies formulate sound policies and support programs which are necessary to enhance financial performance of insurance firms in Kenya.

The findings contributed to the theoretical body of intellectual capital research by connecting firm innovation, intellectual capital and financial performance of insurance firms and more specifically advance the body of knowledge and stimulate further discussions that will foster the goals of insurance institutions. The study is also expected to bring on board the resource that are necessary to help financial performance of insurance institutions.

### **1.6 Scope of the Study**

The study focused on the effect of firm innovation on intellectual capital and financial performance. The study was limited to registered insurance firms which are members of Insurance Regulatory Authority (IRA). The Insurance industry is represented by a trade body known as Association of Kenya Insurance (AKI, 2014). The industry is overseen by a regulator known as Insurance Regulatory Authority (IRA). Insurance Institute of May, 2015, shows that the market comprised of 49 insurance companies. The insurance industry recorded gross written premium of Kshs.101.60 billion as the global economy continued



to recover from the 2012/13 recession, the first global downturn since 1946 (AKI Report, 2013). The study was limited to three dimensions of intellectual capital which included human capital, social capital and organizational capital. Primary data was conducted from the employees of insurance firms' for period of five months

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

This chapter covers the concept of financial performance, concept of firm innovation and concept of intellectual capital. The chapter also covered theories of the study and the conceptual framework.

#### **2.1 Concept of Financial Performance**

Financial performance is the profitability of a business enterprise measured through various measures mostly return on assets and return on equity. Financial performance is the most widely used measure of organizational performance as the benefits of organizational performance usually appear in the financial results of an organization (Luo *et al.*, 2012). Financial performance can be defined as “the extent to which the organization performs in relative profitability, return on investment, and total sales growth” (Ho, 2011). In addition, (Luo *et al.*, 2012), refers to financial performance as the fulfilment of an organization’s economic goals which is reflected in the outcomes of financial and market indicators.

Financial performance measures how well a firm is generating value for the owners. It can be measured through various financial measures such as profit after tax, return on assets (ROA), return on equity (ROE), earnings per share and any market value ration that is generally accepted. Generally, the financial performance of banks and other financial institutions has been measured using a combination of financial ratios analysis, benchmarking, measuring performance against budget or a mix of these methodologies (Ahmad *et al.*, 2011).

Hernaus *et al.*, (2012), suggested that financial performance is usually measured using the following: return on assets (ROA), return on equity (ROE), return on investment (ROI), profit margin, earning per share, and value per employee. However, (Katchova & Enlow, 2013), reported that Return on Asset and Return on Equity are considered to be the most popular means for measuring a firm's financial performance. It must be noted that focusing solely on financial performance as a measure of organizational performance is not enough to improve financial results (Tuanmat, & Smith, 2011). Gruian (2011), mentioned that financial performance is a result of operational performance; therefore without operational performance financial performance would not exist. As a result, organizations must adopt a performance-evaluating system that looks beyond measuring only financial performance (Chang and Lee, 2011).

Firm performance is a multidimensional construct that consists of four elements (Alam *et al.*, 2011). Customer-focused performance, including customer satisfaction, and product or service performance; financial and market performance, including revenue, profits, market position, cash-to-cash cycle time, and earnings per share; human resource performance, including employee satisfaction; and organizational effectiveness, including time to market, level of innovation, and production and supply chain flexibility.

The financial statements of financial institutions commonly contain a variety of financial ratios designed to give an indication of the corporation's performance. Simply stated, much of the current performance literature describes the objective of financial organizations as that of earning acceptable returns and minimizing the risks taken to earn this return (Alam *et al.*, 2011). There is a generally accepted relationship between risk and return, that is, the

higher the risk the higher the expected return. Therefore, traditional measures of firm performance have measured both risks and returns. The increasing competition in the national and international financial markets, the changeover towards monetary unions and the new technological innovations herald major changes in banking environment, and challenge all firm to make timely preparations in order to enter into new competitive financial environment.

Profit after tax has been widely used as measures of firms' performance. Firm performance is the outcomes achieved in meeting internal and external goals of a firm (Lin *et al.*, 2008). Using organizational goals as a basis, different methods are adopted by different firms to measure their performance. This performance indicator can be measured in financial and non-financial terms (Bagorogoza and Waal, 2010; Bakar). Most firms' prefer to adopt financial indicators to measure their performance (Grant *et al.*, 1988). Return on assets (ROA), average annual occupancy rate, net profit after tax and return on investment (ROI) are the commonly used financial or accounting indicators by firms (Tavitiyaman *et al.*, 2012). Some other common measures are profitability, productivity, growth, stakeholder satisfaction, market share and competitive position (Bagorogoza and Waal, 2010). However, financial elements are not the only indicator for measuring firm performance. It needs to combine with non-financial measurement in order to adapt to the changes of internal and external environments. Supporting this opinion, Rubio and Aragon (2009) divided business performance into four dimensions, that is internal process, open system, rational goal and human relations, where each dimension is measured by any changes in its own variables.

Another measure of performance is Return on Assets (ROA) which is an indicator of how profitable a company is relative to its total assets. It gives an idea as to how efficient management is at using its assets to generate earnings. Related to this measure is Return on Equity (ROE) which is the amount of net income as a percentage of shareholders equity. It measures a corporation's profitability by revealing how much profit a company generates with the money shareholders has invested (Ngari *et al.*, 2013).

The concept of financial performance implies measuring the results of a firm's policies and operations in economic terms. These results are reflected in the firm's return on investment, return on assets and value added. Performance differences in firms are often the subject of academic research and government analysis (Verreynne and Meyer 2008). The underlying motivation for this kind of research is the quest for those factors that may provide firms with a competitive advantage and hence drive firm profitability. Traditionally, the emphasis in analyzing variations in firm performance has been at the industry level, implying that the structural characteristics of an industry ensure substantial homogeneity among firms within that industry and as a result determine to a large extent firm performance.

Company's financial performance is the natural consequence of operational performance, understood as the final result of all corporate efforts. If the other dimensions related to performance (productivity, efficiency, effectiveness) show measurement difficulties, these disappear in the case of financial performance, which is a global measure of all the others. Much of the empirical studies that examine financial performance are limited to an analysis based on accounting information because it can be obtained and compared easily. Financial

performance is a measure of how well a company uses the invested capital to generate income. This term is usually utilized as a measure of the overall health of the company for a certain period of time, and can be used to compare similar entities in the same industry or to compare industries and sectors. Performance analysis based on accounting measures uses the annual financial statements as source of information. On this basis there are a calculated series of financial ratios covering several quantitative and qualitative aspects of performance: profitability, liquidity, financial structure (debt) and turnover.

## **2.2 Concept of Intellectual Capital**

The 21st century is more dominated by knowledge economy, as more and more firms are trying to finding better ways to use their resources efficiently in order to sustain in the dynamic changing business environment, hence there is a huge move by many firms from production era to knowledge era and from production labor to knowledge worker (Lipunga, 2014). It is no secret that the firm that continues to invest in new skill set and technology will survive. With the rapid growth of knowledge and technology innovation, the growth of organization has changed in order to cope with the changing environment. With changes in the global economy, intellectual capital has become the main ingredient for the organization to sustain the competitive world in which they operate (Bontis, 2001)

According to GAAP (2013), intellectual capital is the value of firm's intangible assets that aren't reflected on the balance sheet. Intellectual capital is defined as set of non- financial, non-physical resources that procures a competitive advantage for the enterprise (Jussupova, Mariethoz and Probst, 2007). Mouritsen and Larson (2001) suggest that intellectual capital is the aggregate sum of intangible assets which comprise both human

and structural capital. Roos *et al.*, ( 2005 ) define intellectual capital as all non –monetary and non – physical resources that are fully or partly controlled by the organization and that contribute to the organizations value creation (Peng *et al.*, 2007). It is also defined as difference between company market value and its book value, or the resource created from internal learning and development of valuable relationship (De Pablos, 2003).The OECD defines intellectual capital as the economic value of two categories of intangible assets of a company which include human capital and structural capital.

After analyzing the approaches of several important authors, Suciu (2006) reached three conclusions that: intellectual capital is an intangible resource of the company, competitive advantage is based on intellectual capital, and company value is the result of intellectual capital leverage. The same author defines intellectual capital as the sum of all company's intangible resources that confer a competitive advantage and which combined, could bring future benefits.

Following the work of Edvinsson and Malone (1997), Sveiby (1997), Roos *et al.*,(1997), Bontis (1999), O'Donnell *et al.*, (2004, 2006), Sällebrant *et al.*, (2007), Curado and Bontis (2007) among others, intellectual capital is defined as encompassing: human capital; structural capital; and relational capital. Bontis (1998) sub-divided Intellectual capital into three elements: human capital, structural capital and relational capital. In general, researchers (Bontis, 2004; Bontis and Fitz-enz, 2002; Seleim, Ashour, and Bontis, 2004) and those involved in the field of intellectual capital believed that the intellectual capital has three components: human capital, structural capital and relational capital. Over time authors identified three distinct components of intellectual capital: human capital,

structural capital and relational (customer) capital. This classification has enjoyed a wide acceptance in literature (Clarke, *et al.*, 2010). Other authors have identified only two components: individual employees' knowledge and structural capital, which is what remains within the company after the employees leave work. The latest definition of intellectual capital was made by Mondal and Ghosh (2012) indicated that intellectual capital as “intangible assets or intangible business factors of the company, which have a significant impact on its performance and overall business success, although they are not explicitly listed in the balance sheet (if so, then under the term goodwill).” There are many researchers who divided the intellectual capital into three main components of human capital, structural capital and relation capital Edvinsson and Malone (1997); human capital is the personal competencies, knowledge, technologies, and experiences of the entire staff and management of a company, including the creativity and innovation capacities of the corporate organization. The structural capital is a supportive framework that gives physical form and power to human capital, as well as an organized capacity that includes the tangible system intended for communications or the storage of intellectual materials. Customer capital, they refer to the sum of customer satisfaction, durability, price sensitivity, and the financial soundness of long-term clients.

This study uses Andriessen and Stem (2004) definition of intellectual capital who broke down into three categories like human resources, organizational resources and relational resources. This was supported by Youndt *et al.*, (2004) who pointed out that intellectual capital consists of human capital, organizational capital and social capital. They further explain that intellectual capital is the sum of all knowledge that an organization is able to leverage in the process of conducting business to gain competitive advantage.



### **2.2.1 The Concept of Human Capital**

The studies of human capital suggests that firms come up with the amount of investment needed for human capital based on the future potential of this ‘asset’; for example advancement in productivity. In this case, human capital potential is seen together with training on the technical aspects and knowledge gathering (Chen & Lin, 2004). This is an important factor in increasing the assets of the organization by improving the employees in terms of productivity and to develop a competitive edge for the firm (Crook, Todd, Combs, Woehr, & Ketchen, 2011). Capitalizing on human capital is centered on creating and adding value to the existing business operations and eventually increasing profitability based on the stock of human capital (Brown, Adams, & Amjad, 2007; Mosavi, Nekoueizadeh, & Ghaedi, 2012).

In order to achieve success in the future and business surety, highly skilled and competent individual employee, firm, and nation are important features. This view and concept is derived from the fact that learning and gathering knowledge, being innovative and creative and having competencies are characteristics that cannot be substituted; they need to be learnt ferociously within the firm for continued success (Rastogi, 2000). A lot of emphasis is put on human capital because it is recognized that a firm’s value and long-term sustainability in the market is less dependent on tangible assets and more on intangible assets such as human capital (Slaus & Jacobs, 2011; Stiles & Kulvisaechna, 2003). This is also in line with current management studies that emphasize on core competencies and one of these competencies are people based skills (Stiles & Kulvisaechna, 2003). It is the human capital in a firm that will sustain the firm’s goals over time and develop its

competitiveness and capability of its people to work together in the form of a synergy that is hard to duplicate (Holcomb, 2007).

Human capital has also been identified as a competitive advantage for a firm. It allows the firms to increase their assets and use it to acquire new businesses. It is also human capital that assists firms to get and increase other resources such as finances, infrastructure besides the increase of knowledge and experience (Unger et al., 2009). The effect of human capital on the productivity of the organization can be seen through several aspects (Ballot, Fakhfakh, & Taymaz, 2001): 1) A manager with a good set of human capital under him is able to decide accurately as opposed to his competitors; 2) Training the personnel in the R & D units will give rise to innovative and quality products; 3) With a skilled human capital, new recruits are also able to learn from the others easily.

### **2.2.2 The Concept of Social Capital**

Nahapiet & Ghoshal (1998) define social capital as the sum of the actual and potential resources embedded within, available through and derived from the network of relationships possessed by an individual or a social unit. According to the work of Nahapiet & Ghoshal (1998), 'the central proposition of social capital theory is that networks of relationships constitute a valuable resource for the conduct of social affairs...much of this capital is embedded within networks of mutual acquaintance'. Social capital, it is argued, increases the efficiency of action, and aids co-operative behavior (Nahapiet & Ghoshal, 1998).

A broader understanding of social capital accounts for both the positive and negative aspects. It includes vertical as well as horizontal associations between people, and behavior

within and among organizations, such as firms. This view reckons that horizontal ties are needed to give organizations a sense of identity and common purpose, but also stresses that without "bridging" ties that transcend various social divides like religion, ethnicity, socio-economic status, horizontal ties can become a basis for the pursuit of narrow interests, and can actively preclude access to information and material resources that would otherwise be of great assistance to the organization (World Bank, 1998). Social capital can have a negative effect on a firm's value (Portes and Landholt 1996). Communities, groups or networks which are isolated, parochial, or working at cross-purposes to society's collective interests can actually hinder economic and social development.

Social relationships and the social capital therein, are an important influence on the development of both human and intellectual capital. At the individual level, individuals with better social capital - individuals with stronger contact networks - will 'earn higher rates of return on their human capital' (Garavan *et al.*, 2001). Yet it is at the organization level that social capital is highly important. As Social capital with its stress on linkages between individuals, creates the conditions for connections, which are non-imitable, tacit, rare and durable. Gratton & Ghoshal (2003) contend that social capital is based on the twin concepts of sociability and trustworthiness: 'the depth and richness of these connections and potential points of leverage build substantial pools of knowledge and opportunities or value creation and arbitrage.

Measuring social capital may be difficult, but it is not impossible, and several studies have identified useful proxies for social capital. It can be measured using trust, customer capital, civic engagement or as a function of longevity. Owing to its external nature, knowledge

embedded in customer capital is the most difficult to codify. One manifestation of customer capital that can be leveraged from customers is often referred to as “market orientation”. Hsiu-Yueh (2006) indicate that market orientation involves market intelligence pertaining to current and future needs of customers, dissemination of intelligence horizontally and vertically within the organization, and organization wide action or responsiveness to market intelligence.

Arrow (2000) contributes to the discussion about the contribution of Social capital to growth by highlighting the importance of cooperation and trust within the firm. The interdependence between decisions of individual agents and the emergence of externalities and common goods makes cooperation imperative to maximizing social welfare. The superiority of social cooperation has long been documented in economic and social thought. But social capital, as social norms and networks, sustains cooperation by emphasizing its intrinsic value and its pursuit as an end in itself. It is a mixed-motive cooperation, in which collective behavior takes account of its effects on the welfare of others, alongside its own. In this manner, it operates as an internal commitment mechanism to resolving the social dilemma or collective action problems from free-riding and narrow-interested calculation.

### **2.2.3 The Concept of Organization Capital**

Organizational capital is the information/knowledge embodied in employees. As such, business practices that facilitate/enhance the knowledge embodied in employees, such as employee training, empowerment and job design will enable companies to utilize resources more efficiently, and garner a competitive advantage (Knyphausen 1993)). Organizational

capital is the companies' values and norms that enable companies to utilize the physical resources more efficiently and help create and sustain competitive advantage. Organizational capital is the company-specific codified and tacit knowledge that enables companies to combine resources to generate output (Lev and Radhakrishnan, 2005).

Organizational capital is embodied in the set of unique business processes and practices that enable some companies to combine resources more efficiently than others to generate output. In a dynamic business environment organizational capital provides the underpinning for companies to adapt and respond to changing environments. Organizational capital is closely connected to, and inspired by, the resource-based view (Sadowski and Ludewig, 2004; Schneider, 2008) which states that strategic resources that generate a lasting competitive advantage have to be scarce, hard to imitate, and hard to replace (Barney, Wright, and Ketchen, 2001; Knyphausen, 1993).

Organizational routines are usually stable for intermediate time periods. Despite this stability, organizational capital is exposed to the risk of becoming obsolete due to imitation or innovation of competitors (Lev and Radhakrishnan, 2005). Only the part of organizational capital that cannot be imitated can generate a sustainable competitive advantage. Organizational capital is idiosyncratic and cannot be traded, unless the whole organization itself is sold (Black and Lynch, 2005). Therefore, there is no market price on organizational capital (Ramirez and Hachiya, 2006). Attempts to identify organizational capital must be closely linked to its effects on profit, added value, or other performance measures.

### **2.3 Concept of Innovation**

Innovation can be defined as the commercial or industrial application of something new; a new product, process, or method of production; a new market or sources of supply; a new form of commercial business or financial organization (Schumpeter, 1934). It can also be defined as the intersection of invention and insight, leading to the creation of social and economic value (Council of Competitiveness, 2005). Innovation covers a wide range of activities to improve firm performance, including the implementation of a new or significantly improved product, service, distribution process, manufacturing process, marketing method, or organizational method (Samson 2010).

Innovation refers to all scientific, technological, organizational, financial and commercial activities which lead to, or are intended to lead to, the implementation of technologically new or improved products or services. Hence, an innovation contains new ideas which influence the behavior of economic agents in previously unknown way. The introduction of new technology, and the improvement in the organizations' level of production increases firm's efficiency and enables it to produce at lower costs than its rivals. Similarly, the introduction of new products provides consumers with new goods and services which, in turn, lead to the expansion of firms in new segments of the market. Therefore, innovation enables firms to differentiate themselves from their rivals (Samson 2010).

In today's business environment, organizations need to consider innovation as a key factor in organizational products and processes to survive in highly competitive international markets and changing technologies (Alegre et al., 2006; Baron and Tang, 2011). In addition, numerous scholars believe innovation is the main source for competitive

advantage and many have noted that innovation plays an important role in economic development (Agbor, 2008; Chen and Chen, 2009; Gumusluoglu and Ilsev, 2009; Karkalakos, 2013).

Innovation results from two major sources: internal R&D that draws on the firm's accumulated knowledge, and imitation of the innovation of other firms. In addition to introducing new goods and methods of production, R&D also supports the opening of new markets and reinvention of the firm's operations to serve those markets optimally. Innovation is particularly the domain of entrepreneurs, whose function is: to reform or revolutionize the pattern of production by exploiting an invention or, more generally, an untried technological possibility for producing a new commodity or producing an old one in a new way, by opening up a new outlet for products and so forth (Gary and Tamer 2004).

Theories concerning advantages of firm innovation have typically evolved out of the Schumpeterian argument that new products and processes developed by a firm are protected from imitation for a certain period. A successful innovation thus generates a proprietary competitive position that bestows on the firm a competitive advantage and superior performance (Lyons, Chatman & Joyce, 2007). The imitation that occurs during the Schumpeterian process of creative destruction then generates the need for enterprises to produce still more innovations in order to maintain a competitive advantage.

Lyons, Chatman & Joyce (2007) argue that the relevant aspects of technological change include innovations that reduce costs related to the collection, storage, processing, and transmission of information, as well as innovations that transform the means by which customers' access bank services. They cited automated teller machines, telephone banking,

internet banking, and e-money as being among the significant innovations affecting the banking distribution system that influence banking performance significantly. Mansury & Love (2008) add that client relation management systems, bank management technologies, and various other technologies are among the major changes in internal banking systems that also have exercised a positive influence on banking performance and profitability.

Studies from the early period of research on innovation have typically reported a positive relationship between innovation and measures of firm performance. In a new generation of models studying the impact of innovative activities on firm performance, the focus has shifted to the complex innovation process and channels through which the innovation inputs are transformed into better performance (Loof *et al.*, 2006; Kemp; *et al.*, 2003). The significance of firm innovation is described by Roberts and Amit (2003) as a means leading to a competitive advantage and superior performance. Their findings confirm the positive relationship between innovation activities and productivity at the firm level and provide further evidence on the relationship between size and innovation activities.

## **2.4 Theoretical Perspectives**

### **2.4.1 Balance Score Card Approach**

The balance score card was first introduced by David Kaplan and Robert Norton after a one year study of 12 companies (Kaplan & Norton, 1992). Kaplan and Norton argued that managers should not only focus on financial measures when taking decisions. Non-financial criteria also had to be taken into account. When integrated carefully and in a balanced manner in a “scorecard” it would provide managers with a brief but comprehensive and timely view of their business. Four different key perspectives were



identified as being critical and thus should be included, the financial, customer, internal-business-process/learning, and growth perspectives

The balance score card arose out of the need to improve the planning, control, and performance measurement functions of management accounting. Because of the rise in popularity of the balance score card and benefits attributed to its usage, Atkinson *et al.*,(1997) stated that balance score card is a significant development in management accounting that deserves intense research attention.

Frigo & Krumwiede (2000) suggested that the balance score card can help remedy this situation because it requires organizations to engage in several beneficial activities. These activities delineate the major strengths of the balance score card. Interest among both academics and practitioners in performance measurement systems as a tool for delivering strategic objectives is now well established in the management literature (Kaplan & Norton, 1992; Eccels & Pyburn, 1992).

Performance measurement incorporating non-financial measures has been a topic of great interest throughout most of the 1990s. This is because non-financial measures overcome the limitations of just using financial performance measures. “Soft” measures, such as employee satisfaction and commitment, are coming to the fore as protagonists of the business performance measurement revolution, which urge organizations to complement their traditional financial focus with softer data. Kaplan & Norton (1992) suggest that what is needed is “a balanced presentation of both financial and operational measures”. In addition, while traditional financial measures report on what happened during the last period without indicating how managers can improve performance in the next, the

scorecard functions as the cornerstone of the organization's current and future success (Kaplan & Norton, 1996).

According to Chaudron (2003), the BSC is a way of: measuring organizational, business unit or departmental success; balancing long-term and short-term actions; balancing the following different measures of success; Financial; Customer; Internal Operations; Human Resource Systems & Development (learning and growth); tying the firm's strategy to measures of action. Much of the success of the scorecard depends on how the measures are agreed, the way they are implemented and how they are acted upon (Bourne, 2002).

Performance measures used in the balanced scorecard approach tend to fall into four perspectives, (Atkison *et al.*, 2007): - Financial perspective: the financial perspective contains objectives and measures that represent the ultimate success measures for profit – maximizing companies. Financial performance measures indicate whether the company's strategy and its implementation are delivering increase in shareholder value. Customer perspective: the customer perspective should describe how company intends to differentiate itself from competitors to attract, retain, and deepen relationships with target customers. This perspective should reflect the heart of the strategy; it should contain specific objectives and measures for the strategy's customer value proposition. - Internal process perspective: the internal process perspective identifies the critical operating, customer management, innovation, and regulatory and social process in which the organization must excel to achieve its customer, revenue growth, and profitability objectives. - Learning and growth perspective: the learning and growth perspective identifies the objectives for the people, systems, and organizational alignment that create

long-term growth and improvement. The objectives of this perspective emphasize the employee capabilities and skills, technology, and organizational alignment. The balanced scorecard is a strategic management system that translates the vision and strategy of an organization into operational objectives for each of four perspectives and then establishes specific performance measures for each of the objectives.

Kaplan and Norton describe how innovative companies are using the measurement focus of the scorecard to accomplish the following critical management processes (Drury, 2001): Clarifying and translating vision and strategy into specific strategic objectives and identifying the critical drivers of the strategic objectives. Communicating and linking strategic objectives and measures. Ideally, once all the employees understand the high level objectives and measures, they should establish local objectives that support the business unit's global strategy. Planning, setting targets, and aligning strategic initiatives. Such target should be over a 3-5 year period broken down on a yearly basis so that progression target can be set for assessing the progress that is being made towards achieving the longer-term target. Enhancing strategic feedback and learning so that managers can monitor and adjust the implementation of their strategy, and, if necessary, make fundamental changes to the strategy itself.

#### **2.4.2 Resource Based View Theory**

The central premise of resource based view addresses the fundamental question of why firms are different and how firms achieve and sustain competitive advantage by positioning their resources. Clearly this ideas are not new. During the last 50 years many management academics have contributed to the development if this topic. Selznick's (1957) idea of an

organization distinctive competence is directly related to resource base view. Also, Chandler's (1962) notion of structure follows strategy, as well as Andrew's (1971) proposal of an internal appraisal of strength and weaknesses, led to the identification of distinctive competence.

However, the founding idea of viewing a firm as a bundle of resources was pioneered by Penrose in 1959. Penrose argued that it is the heterogeneity, not the homogeneity of the productive services available from its resources that give each firm its unique character. The notion of firm's resources heterogeneity is the basis of the resource based view. The significance of the resource perspective as a new direction in the field of strategic management was broadly recognized with the path-breaking article by Wernerfelt (1984). Wernerfelt (1984) suggested that evaluating firms in terms of their resources could lead to insights that differ from traditional perspectives.

In 1991, Barney presented a more concrete and comprehensive framework to identify the needed characteristics of firm resources in order to generate sustainable competitive advantage. These characteristics include whether resources are valuable (in the sense they exploit opportunities and /or neutralize threat in a firm's environment), rare among firms current and potential competitors, inimitable and non- substitutable (Barney, 1991). In respect many authors (Amit & schoemaker, 1993; Mahoney and Pundian, 1992; Peteraf, 1993; Rumelt, 1984; Dierickx & Cool, 1989) have adopted and even expanded Barney's view to include: resource durability, non-tradability and idiosyncratic nature of resources.

### **2.4.3 Human Capital Theory**

The theory of Human Capital can trace its origin to macroeconomic development theory. In the 1950s, the main factors of production comprised land, labor, physical capital and management (Mincer 1962b, Becker 1993). By the 1960s, however, economists had great difficulty in explaining the growth of the US economy based on the aforementioned factors of production (Schultz 1961). It was the empirical work of Becker (1964), Schultz (1961) and Mincer (1974) that challenged the prevailing assumption that the growth of physical capital is paramount to economic success. The basic premise behind HC theory is that people's learning capacities are of comparable value with other resources involved in the production of goods and services (Lucas 1990). Applied in the context of organizations, Human Capital theory suggests that individuals who invest in education and training will increase their skill level and be more productive than those less skilled, and so can justify higher earnings as a result of their investment in human capital. As Becker (1993, p19) suggests, 'schooling raises earnings and productivity mainly by providing knowledge, skills and a way of analyzing problems'. Moreover, Becker's ideas play an important role in contemporary employee development and learning literature, as HC theory fuels the idea that employees' knowledge and skills can be developed through investment in education or training, that is, learning (Grant 1996a, Hatch and Dyer 2004). One of Becker's most important contributions to employee development theory relates to training. Becker (1964) argues that, on the whole, investments in education and training will improve productivity; however, it is the type of training that determines who will pay for the training, that is, the employee or the firm. Earlier work by Pigou (1912) came to the conclusion that firms

would not have sufficient incentives to invest in their workers' skills because trained workers can quit to work for other employers who can use these skills.

Human capital theory argues that widespread investment in human capital creates in the labour-force the skill-base indispensable for economic growth. The survival of the human-capital reservoir was said, for example, to explain the rapid reconstruction achieved by the defeated powers of the Second World War (Heiner, 2008).

Richard (2012) noted that human capital arises out of any activity able to raise individual worker productivity. In practice full-time education is, too readily, taken as the principal example. Investment in human capital involves both direct costs, and costs in foregone earnings. Workers making the investment decisions compare the attractiveness of alternative future income and consumption streams, some of which offer enhanced future income, in exchange for higher present training costs and deferred consumption. Returns on societal investment in human capital may in principle be calculated in an analogous way.

Even in economics, critics of human-capital theory point to the difficulty of measuring key concepts, including future income and the central idea of human capital itself. Not all investments in education guarantee an advance in productivity as judged by employers or the market. In particular, there is the problem of measuring both worker productivity and the future income attached to career openings, except in near-tautological fashion by reference to actual earnings differences which the theory purports to explain. Empirical studies have suggested that, though some of the observed variation in earnings is likely to be due to skills learned, the proportion of unexplained variance is still high, and must be

an attribute of the imperfect structure and functioning of the labour-market, rather than of the productivities of the individuals constituting the labour supply (Becker, 1993).

Human-capital theory has attracted much criticism from sociologists of education and training. In the Marxist renaissance of the 1960s, it was attacked for legitimating so-called bourgeois individualism, especially in the United States where the theory originated and flourished. It was also accused of blaming individuals for the defects of the system, making pseudo-capitalists out of workers, and fudging the real conflict of interest between the two. However, even discounting these essentially political criticisms, human-capital theory can be regarded as a species of rational-exchange theory and open to a standard critique, by sociologists, of individualist explanations of economic phenomena (Herbert, 1975).

## **2.5 Effect of Human Capital on Financial Performance**

Human Capital refers to the knowledge, expertise, and skill one accumulates through education and training (Severine and Lila, 2009; Marimuthu *et al.*, 2009; Dae-bong, 2009; Malose and Boris, 2012; Afiouni, 2013; Armstrong, 2014, Odhong *et al.*, 2014; Joshi *et al.*, 2015). The concept of Human Capital was initially formulated by Theodore Schultz in the early 1990, as a way of explaining the advantages of investing in education on a national scale (Afiouni, 2013) cited in Odhong and Were (2013). The emphasis on human capital in organizations reflects the view that market value depends less on tangible resources, but rather on intangible ones, particularly human resources (Kulvisaechana, 2006) cited in Odhong *et al.*, (2014).

Human Capital includes anything associated by the people within the organization. It includes elements such as employees' tacit knowledge, skills, experience and their

attitude (Bontis and Serenko, 2009). Human Capital can be seen as a primary tool for an organization to learn by influencing the ability to acquire new knowledge (Kang and Snell, 2009). Human Capital focuses on competencies, attitudes and intellectual agility. Among human capital elements, competency is the most frequently cited element of human capital (Andriessen, 2004; Marr and Moustaghfir, 2005; Roos *et al.*, 2005). Roos *et al.*, (2004) suggest six elements of human capital: educational levels, job-related licenses or qualifications, job-related knowledge, job potential, personality traits and job-related abilities. Ross *et al.*, (2004) in the context of their study described human capital as inclusive of the knowledge, skills, attitudes and intellectual agility of employees.

The contribution of an organization in its human capital can greatly benefit the firm and the individuals working in that firm. It helps in the development of employees to be more productive which helps the firm to perform better (Awan and Sarfraz, 2013). A firm's human capital is an important source of financial performance (Hitt *et al.*, 2001) and therefore investments in the human capital of the workforce may increase employee performance (Pfeffer, 1998). Helping individuals to develop knowledge, skills and competence increases the human capital of the organization. People are better equipped to do their jobs and this is generally of value to the organization (Cunningham, 2002). The resource-based theory argues that firm performance is a function of how well managers build their organizations around resources that are valuable, rare, inimitable, and lack substitutes (Barney, 1991). Human capital as resources meet these criteria, hence the firm should care for and protect resources that possess these characteristics, because doing so can improve firm performance (Crook, Ketchen, Combs, and Todd, 2008).



Seleim, Ashour, and Bontis(2007) conducted a survey on 38 software based firms with 107 member representatives from the Software Industry Chamber of Egypt; and the outcome revealed that human capital positively impacts the performance level of these firms. Factors such as training and teamwork resulted in outstanding performances which increased the productivity in these firms. A related finding indicated a negative and non-significant influence between number of years of work experience and the firms' overall performance ( $r = -0.030$ ,  $p = 0.858$ ). This finding is contradictory to the findings of Wynekoop and Walz (2000) that revealed a positive relationship between prior work experience and firm's performance.

Chadwick (2007) argued that the importance of human capital in enhancing financial performance depends on the degree to which it contributes to the creation of a competitive advantage. From an economic point of view, transaction-costs indicate that firm gains a competitive advantage when they own firm-specific resources that cannot be copied by rivals. Thus, as the uniqueness of human capital increases, firm have incentives to invest resources into its management and the aim to reduce risks and capitalize on productive potentials. Hence, individuals need to enhance their competency skills in order to be competitive in their organizations thus more financial performance.

A study by Seleim, Ashour, and Bontis (2007) analyzed on the relationship between human capital and organizational performance of software companies. They found that the human capital indicators had a positive association on organizational performances. These indicators such as training attended and team-work practices, tended to result in superstar performers where more productivity could be translated to organizational performances.

This was also supported by Dooley (2000) who found a significant positive correlation between the quality of developers and volume of market shares. Based on the above arguments the study can conclude that human capital indicators enhanced the firm performance directly or indirectly.

In a study conducted by Choudhury, (2010) it was found out that organizations with a higher level of human capital have better performance. The result is consistent with the resource based view theory which suggests that firms' resources such as human capital have the potential and promise to generate entrepreneurship behavior and organizational performance (Barney, 1991; Sirmon, Hitt, & Ireland, 2007). This result also confirms the notion that human capital enables employees' inclination to obtain entrepreneurial skill such as the expertise to strategically manage resources, creativity, and agility (Alvarez & Barney, 2002). This finding is consistent with Seleim, Ashour, and Bontis (2007) and Maditinos, Chatzoudes, Tsairidis, & Theriou (2011) who found that human capital indicators had a positive relationship with organizational performances. The findings are also in accordance with Carmeli (2004) who concluded that human capital is significantly and positively related to organizational performance. The current literature to a large extent supports the fact that firm performance is positively impacted by the presence of human capital practices (Noe *et al.*, 2003; Youndt *et al.*, 2004).

Shaheen et al., (2013) conducted an empirical study on employees training and organizational performance: mediation by employees performance. The intention of this specific study was to determine the impact of training on employee performance as well as on organizational performance and employee performance mediating role between

employee training and organization performance. The research proposed the way the teachers' effectiveness could be improved simply by suitable education and training. Both quantitative and qualitative methods were used, questionnaire used for data collection involving 220 questionnaires that were dispersed amongst schools teachers, out of those 197 received with 90 percent turnover. SPSS was used for data analysis and policy based on results presented for ensuring training effectiveness and enhancing employee's performance. With support of SPSS, correlation and regression ended up being conducted to generate results. Overall results revealed significant and positive association between training and organization performance. The mediating role of employee performance also gave positive result. Generally, the model supported well both theoretically and statistically.

Ravi et al., (2013) did a Study on Human Capital Investments and Employee Performance: An Analysis of IT Services Industry. The study examined whether Human Capital Investment is directed toward employee training is effective in improving employee performance. The panel data set was used to link formal training with performance at the individual employee level. Using a dynamic panel model, the study identified a significant positive impact of training on employee performance. A unit increase in training is linked to a 2.14 per cent increase in an employee performance. The study also found that general training that an employee can utilize outside the focal firms improves employee performance.

Seleim et al (2007) cited in Maran and Maimunah (2009) in their study analyzed the relationship between human capital and organizational performance of software

companies. They found that the human capital indicators had a positive association on organizational performance. These indicators such as training attended and team-work practices, tended to result in superstar performers where more productivity were translated to organizational performance. He conclude that human capital indicators enhances the organizational performance directly or indirectly.

Ariga and Brunello (2009) conducted a study to investigate the relationship between education and employer- provided training, both on-the-job and off-the-job, using a unique dataset drawn from a survey of Thai employees conducted in the summer of 2001. The authors found a negative and statistically significant relationship between educational attainment and on-the-job training (OJT) and a positive and statistically significant relationship between education and off the- job training.

Thomas et al., (2009) conducted a study to establish how broadly does education contribute to job performance? It provides a meta-analysis on the relationships between education level and dimensions of job behaviors representing task, citizenship, and counterproductive performance. Results here show that, in addition to positively influencing core task performance, education level is also positively related to creativity and citizenship behaviors and negatively related to on-the-job substance use and absenteeism.

Barro and Lee (2010) estimated that increasing average years of schooling by one year increases per capita GDP by 1.7% to 12.1% depending on specification. Overall studies found that education significantly and positively correlated with economic growth and argue that causation runs from education and growth in line with human capital growth models. In addition, existing employees will be motivated to attain additional education for

an increase in compensation. The organization saves money by retaining existing employees in addition to developing stronger skill sets that will increase productivity.

According to Hecht et al., (2011) the process of successful implementation of knowledge management has three stages: adoption, acceptance, and assimilation. According to Barrick (2011), knowledge is a body of information, usually of a factual or procedural nature, about a particular domain that makes for successful performance of a task.

Skills and skills development are essential component of all efforts in this competitive era. Skills are at the core of improving individual's employment outcomes and increasing countries 'productivity and growth. This is particularly relevant as today's developing and emerging countries seek higher sustained growth rates (World Bank, 2014). Skills development programs enable employees gain employability. Employability includes skills, knowledge and competencies that enhances a worker's ability to secure and retain a job, progress at work and cope with change, secure another job if he or she so wishes or has been laid off, and enter more easily into the labor market at different periods of his or her lifecycle (Omolo, 2013; Franz and Omolo, 2014).

However, these studies did not address direct effect of human capital on financial performance of firms. Further the above studies were not conclusive in their findings in relation to how human capital aspects affect financial performance. Also, most of the researchers stop their studies at the level of the specific sector descriptive analysis and make conclusions about the industry in general on the basis of a single firm case study. Some works are confined to the trend analysis of human capital components and their contribution to the company's value added.

## **2.6 Effect of Social Capital on Financial Performance**

Social capital refers to the institutions, relationships, and norms that shape the quality and quantity of a society's social interactions (Musimba, 2012). Social capital is about the value of social networks, bonding similar people and bridging between diverse people, with norms of reciprocity (Dekker & Uslander, 2001). A narrow view of social capital, according to the World Bank (1998), can be seen as a set of horizontal associations between people, consisting of social networks and associated norms that have an effect on organizations productivity and well-being. Social networks can increase productivity by reducing the costs of doing business. Social capital facilitates coordination and cooperation.

Social capital plays a critical factor in the process of financial performance of a firm. Social capital has influence on firms' financial performance, the better the social capital, the higher the financial performance of the firm (Laursen *et al.*, 2012). Social capital represents an organization's abilities to interact among employees and with external collaborators; it exemplifies conduits for the sharing and exchange of knowledge (Lu *et al.*, 2011). When the relationship becomes closer among people, people are more willing to support and stimulate to develop ideas (Carmona-Lavado *et al.*, (2010)) which leads to higher financial performance

Social capital represents an organization's abilities to interact among employees (Lu *et al.*, 2011). A good social network in an organization can improve the efficiency of knowledge exchange among individual departments and can increase the integration of resources, it will strengthen the organizational cohesion and the efficiency of work (Zaheer *et al.*, 1998). Moreover, the features of social capital are believed to facilitate coordination and

collaboration within a company (Putnam, 1993). Social capital can utilize firm's relationship with its business collaborators, such as suppliers and alliance partners (Hsu and Fang, 2009). Social capital represents an organization's abilities to interact with external collaborators, we infer that the better the social capital within a firm, the higher the ability to collaborate with its partners resulting to better financial performance of the firm.

Bueno *et al.*, (2004) conducted a study on top managers of Spanish companies and purported that in order to achieve distinctive competencies in knowledge economy the social intangibles become essential resources. They considered social capital as a nexus of both direct and indirect relationships between the firm, the environment and the social unity. They reported that firstly social capital puts the knowledge into action, improving the firm's ability to produce future benefits. Secondly the social capital provides consensus between firms and encourages the understanding with public administration, reducing transaction costs and finally, it is obvious that social intangibles encourage cooperation and the observance of the economic behavior laws.

Sohail & Jayant (2013) investigated the causal relationship between social capital and microfinance and their Implications for rural development. The participation in local organizations, heterogeneity of associations and level of both generalized and institutional trust were identified as the key dimensions of structural and cognitive social capital to influence households' access to credit. On the other hand, when these dimensions were combined in a single social capital index, the result indicated that social capital index has no significant effect on microfinance participation. This result provided support to the

argument that grouping all the dimensions of social capital into one index may run the risk of losing the explanatory power of social capital.

Pinho (2013) conducted a study on the role of relational social capital in examining exporter-intermediary relationships. The objective of the paper aimed to rely on a conceptual model that builds on, and synthesizes, the theoretical foundations of social capital and cooperation. It assumed that the network of relationships and the set of resources embedded within it strongly influenced the extent to which exporter-intermediary cooperation occurs. The findings revealed that among the six relationships examined, five were positively supported. Specifically, the study found a positive and a significant impact of the two dimensions of social capital: cognitive (shared values) and relational (trust) on both commitment and cooperation. However, it did not support the impact of cognitive social capital on relational social capital.

Another research conducted by Pinho (2011) on Social capital and dynamic capabilities in international performance of SMEs found out that in order to build new dynamic capabilities to cope with turbulent and unpredictable markets, small to medium-sized enterprises (SMEs) needed to leverage their network relationships that provide access to novel sources of information. These dynamic capabilities may in turn positively influence international performance.

Paul et al (2009) carried out a research on the measurement of social capital in the entrepreneurial context. The research sought to examine the depth and richness of social capital for new venture creation and thereby identifying the impact of social capital in new venture creation. The paper's examination of the social capital literature thus far, although



not exhaustive, noted that the emergence of several common themes associated the issues of measurement with lack of empirical consensus on an accepted definition of social capital. Mwangi (2012) in his study about Social Capital and Access to Credit in Kenya, indicated that no detailed study has addressed the relationship between social capital and the performance of SMEs and their impact of social network on the overall growth of small enterprises.

Social capital denotes an organization's capabilities to network amongst its employees (Luet *et al.*, 2011). A worthy social system in any organization can develop the efficacy of information interchange between different departments and can escalate the combination of resources, it will reinforce the organizational unity and the efficacy of work (Zaheer *et al.*, 1998). Furthermore, the social capital features thought to assist collaboration and coordination within a company (Putnam, 1993). Social capital can exploit firm's connection with its business coworkers partners, like alliance and suppliers (Fang and Hsu, 2009). Social capital denotes an organization's capabilities to network with outsiders, we deduce that the well the social capital within an organization, the greater the capacity to join forces with its partners.

A research conducted by Pinho (2011) on dynamics capabilities and social capital in global performance of SMEs established that in order to form new vibrant abilities to manage changing market, within small to medium sized enterprises (SMEs) that need to influence their networking relations which gives access to new sources of information. These dynamic abilities then positively impact performance internationally. Paul *et al.*, (2009) carried out a research on social capital measuring in entrepreneurial context. The research

sought to examine the richness and depth of social capital for the new found venture establishment and therefor identify the effect of social capital in new found venture establishment. The examination of social capital literature by the paper thus far, even though not thorough, implied that the advent of common themes severaly associated the measurement issues with the lack of consensus agreement on a believed definition of social capital. In his study on Social Capital and credit access in Kenya, Mwangi (2012) point out that no comprehensive study has talked about the connection between social capital and the SMEs performance and their influence on social network on the complete development of enterprises that are small.

### **2.7 Effect of Organizational Capital on Financial Performance**

The principal role of organizational capital is to link the resources of the organization together into process that creates value for customers and sustainable competitive advantage for the firm (Dess & Picken, 1999). Ghorbani *et al.*, (2012) found that there is a significant relationship between organizational capital management and organizational innovation. Also Al-Dujaili (2012) stated that organizational capital have significant influence upon organizational innovation. Allameh *et al.*, (2010) said that organizational capital positively affects organizational learning capability.

In addition, Gruian, (2011) exhibited that businesses with superior efficiency in structural capital have superior performance in finance. Khalique *et al.*, (2011) showed that customer capital and structural capital have constructive connection with performance of an organization. Finally, Mosaviet *et al.*,(2012) finished by saying that businesses with superior

structural capital efficiency possesses upper ratios of market to book value, therefore their financial performance are better.

Amiri *et al.*, (2011) found that organizational capital is positively related to the incremental financial performance. Kamukama, *et al.*, (2010) stated that there is a strong relationship between structural capital and business performance. While, Maria-Diez *et al.*, (2010) said that structural capital not only empowers and strengthens human capital; it also reveals the aptitude of the organization to transmit and to store intellectual material.

In addition, Gruian (2011) showed that companies with greater structural capital efficiency have better financial performance. Khalique *et al.*, (2011) showed that structural capital and customer capital have positive relationship with organizational performance. Finally, Mosaviet *et al.*, (2012) concluded that companies with greater structural capital efficiency have higher ratios of market-to-book value, and have better financial performance

## **2.8 Mediating Effect of Firm Innovation on the Relationship between Human Capital and Financial Performance**

Human capital denotes to knowledge and skills that persons bring to an organization (Dimov & Shepherd, 2005) and can be acquired through education or personal experience/ skills contributing to both implicit and explicit knowledge of the organization. It refers to processes that relate to training, education and other professional initiatives to increase the levels of knowledge, skills, abilities, values, and social assets of an employee which will lead to the employee's satisfaction and performance (Marimuthu, et al., 2009) and eventually firm innovation. The concept of human capital states that individuals' knowledge, skills and abilities embodied in people compel them to act in new ways

(Coleman, 1988). These knowledge, skills, and abilities represent capital because they enhance productivity (Snell & Dean, 1992). Human capital theory postulates that individuals with more or higher quality human capital will produce more desirable outcomes (Minh *et al.*, 2017).

Human Capital includes anything associated by the people within the organization. It includes elements such as employees' tacit knowledge, skills, experience and their attitude (Bontis and Serenko, 2009). Human Capital can be seen as a primary tool for an organization to learn by influencing the ability to acquire new knowledge (Kang and Snell, 2009). Human Capital focuses on competencies, attitudes and intellectual agility. Among human capital elements, competency is the most frequently cited element of human capital (Andriessen, 2004; Marr and Moustaghfir, 2005; Roos *et al.*, 2005). Roos *et al.*, (2004) suggest six elements of human capital: educational levels, job-related licenses or qualifications, job-related knowledge, job potential, personality traits and job-related abilities. Ross *et al.* (2004) in the context of their study described HC as inclusive of the knowledge, skills, attitudes and intellectual agility of employees

Human capital plays a significant role in improving the features of existing products of a firm (Zerenler *et al.*, 2008). Human capital can be seen as a primary tool for an organization to learn by influencing the ability to acquire new knowledge (Kang and Snell, 2009). Human capital focuses on competencies, attitudes and intellectual agility whereby competency is the most frequently cited element of human capital (Marr and Moustaghfir, 2005). The importance of human capital in enhancing firm innovation depends on the degree to which it contributes to the creation of a competitive advantage (Chadwick, 2007). As the uniqueness of human capital increases firms have the incentives to invest resources

to its innovativeness in order to capitalize on productive potentials. Thus individuals need to enhance their competitive skills in order to be innovative in their organizations thus more financial performance.

A firm's human capital is an important source of sustained competitive advantage (Hiit *et al.*, 2001) and therefore investments in the Human Capital of the work force may increase employee productivity and financial results (Pfeffer, 1998). Helping individuals to develop knowledge skills and competencies increases the Human Capital of the organization. People are better equipped to do their job and this is generally of value to the organization (Cunningham, 2002). The resource based theory argues that firm performance is a function of how well managers build their organizations around resources that are valuable. Rare, imitable and lack substitutes (Barney, 1991). Human Capital as a resource meet this criteria, hence the firm should care and protect resources that possesses this characteristics because doing so can improve organizational performance (Crook, Ketchen, Combs and Todd, 2008).

In recent years human capital is widely believed to be a main source of knowledge and skills in the innovation process. High capacity human capital means higher ability of learning, and thus, could improve the innovation capacity of firms. For companies in today's world, management of human capital might be the only way to succeed (Gavious and Russ, 2009). It ensures a competitive advantage for companies in terms of skills, expertise and willingness to work (McGuirk, Lenihan and Hart, 2015). Littlewood (2004) noted the importance of human capital when they established that, human capital is one of the factors that determine organizational competitiveness, given that competencies,

knowledge, creativity, capacity to resolve problems, leadership and personal compromise are some of the assets required to meet the demands of turbulent environments and reach organizational goals. Human capital management is a key organizational element for obtaining sustainable competitive advantages and its effective administration sets up an enormous potential for value creation in the organization and, therefore, has a direct effect on innovation (Bozbura et al., 2007).

Innovation is definitely one of the basic pillars of company competitiveness. Innovation is increasingly considered to be one of the key activities of the long-term success of companies (Cegarra-Navarro et al., 2016). It plays a prime role in the sustainable operations of all companies (Cortez et al., 2015). Since the last decades, as a result of intense international competition, demanding markets, and rapidly changing technologies, innovation has become one of the most key components for all companies. In particular, it is broadly recognized that innovation impacts on financial performance (Bigliardi, 2013).

Woodward (2009), argued that the reasons for companies to undertake innovations is to achieve higher performance. Innovative companies tend to record better economic-financial performances than their non-innovative competitors (Ferreira, 2010; Kostopoulos et al 2011; Forsman, 2011; Cucculelli & Ermini, 2012). Innovation is fundamental to surviving especially in increasingly globalised world. Innovation aids companies seeking to respond to diversified patterns of demand undergoing constant change and enables improvements to the different fields and activities taking place in society (Cooke, 1998). Therefore, innovation is perceived as the motor of progress, of competitiveness hence increasing financial performance (Romer, 1994; Johansson et al., 2001; Gallego-Álvarez et al, 2011).

It has been demonstrated empirically that human capital of a firm becomes a strategic asset when that knowledge is valuable and unique, thus generating greater competitiveness and ultimately more profit (Subramaniam and Youndt, 2005). Firms promote their capital and, therefore, create value through selection and training thus increasing their performance (Hiit *et al.*, 2001). Generic human capital such as years of schooling is important because people who have received a better education have higher potential to learn and contribute to the success of the company (Hatch and Dyer, 2004; Hiit *et al.*, 2001; Rauch *et al.*, 2005). As the level of employee human capital is fostered, people develop more efficient means of accomplishing task requirements thereby increasing productivity.

While it is intuitive that the knowledge and competence of employees contribute to the organization's innovative capability, it is less clear how having such efforts to enhance individual human capital might transform into financial performance of firms.

## **2.9 Mediating Effect of Firm Innovation on the Relationship between Social Capital and Financial Performance**

Nahapiet & Ghoshal (1998) define social capital as the sum of the actual and potential resources embedded within, available through and derived from the network of relationships possessed by an individual or a social unit. The central proposition of social capital theory is that networks of relationships constitute a valuable resource for the conduct of social affairs and much of this capital is embedded within networks of mutual acquaintance. Social capital, increases the efficiency of action, and aids cooperative behavior (Nahapiet & Ghoshal, 1998). Social capital represents an organization's abilities to interact among employees (Lu *et al.*, 2011). Social capital can utilize firm's relationship with its business collaborators, such as suppliers and alliance partners (Hsu & Fang, 2009).

Social capital represents an organization's abilities to interact with external collaborators, we infer that the better the social capital within a firm, the higher the ability to collaborate with its partners. Social capital as a social phenomenon can lead to creativity, idea generation, facilitation of innovative behaviors, and risk-taking (Coleman, 1998); it is more than a social organization or social value. Social capital improves the output through increasing other efficient resources such as physical and human assets (Chou, 2006). Florida *et al.* (2002) argue that "in a high social capital society, individuals are more eager to work with each other; their risk-taking capabilities improve and this rich social capital leads to innovative activities among them".

Social capital as a social phenomenon can lead to creativity, idea generation, facilitation of innovative behaviors, and risk-taking (Coleman, 1998); it is more than a social organization or social value. Social capital improves the output through increasing other efficient resources such as physical and human assets (Chou, 2006). Florida *et al.* (2002) argue that "in a high social capital society, individuals are more eager to work with each other; their risk-taking capabilities improve and this rich social capital leads to innovative activities among them". This is to say, the higher the degree of communications and the larger the employee's social network, the better the context for the occurrence of innovation. This may be due to the increase in the exchange of ideas and new concepts when the employees come into closer contact with each other.

Brooks and Nafukho (2006) reasoned that, knowledge sharing among the organization members plays an important role in the occurrence of innovation. In fact, they are referring to the possibility of information transfer when the relationships between organization members are improved. Wu *et al.* (2011) also introduced network-like relationships



between individuals as an important and effective factor in the occurrence. Social relationships and the social capital therein, are an important influence on the development of innovation capabilities of a firm. Social capital facilitates the development of innovation by affecting the conditions necessary for exchange and combination to occur. Social capital, with its stress on linkages between individuals, creates the conditions for connections, which are non-imitable, tacit, rare and durable.

Social capital has influence on firms' innovative capability in that, the better the social capital, the higher the propensity to innovate within a firm (Laursen *et al.*, 2012). Social capital represents an organization's abilities to interact among employees and with external collaborators; it exemplifies conduits for the sharing and exchange of knowledge (Lu *et al.*, 2011). When the relationship becomes closer among people, people are more willing to support and stimulate to develop innovative ideas (Carmona-Lavado *et al.*, (2010)). Furthermore, Carmona-Lavado *et al.*, (2010) pointed out that social capital positively influence innovation practice.

Maskell (2000), argues that social capital facilitates and deepens relations among people who belong to partner's relationship, causing parties to learn to work together: an important condition for the creation of innovation capability. Subramantian and Youdt (2005) suggest a link between social capital and innovation capability, with regard to how certain exogenous events can stimulate an organization's intellectual capital and in turn generate different types of innovation. From an empirical point of view, some studies seek to directly relate the impact of social capital on innovation capability (Landry, Amara,& Lamari 2002; Nahapiet & Ghoshal, 1998).

## **2.10 Mediating Effect of Firm Innovation on the Relationship between Organizational Capital and Financial Performance**

Organisational capital are structural elements of organisational culture that are independent of employees. It consist of business processes and system, commitments and rules norms and relationships that enable tangible and intangible resources to be productive. Organizational capital refers to the institutionalized knowledge and codified experiences preserved in and utilized through databases, patents, manuals, structures, systems, and processes (Youndt, Subramaniam & Snell 2004). Some researchers (Bontis 1996; Martinez-Torres 2006) refer to organizational capital as structural capital in regard to knowledge embedded in the routines of the organization. However, Subramaniam and Youndt (2005) and Youndt, Subramaniam and Snell (2004) argue that organizational capital fits better in explaining it since institutionalized knowledge is left behind in the firm when employees go home. Thus, this capital is owned by the firm. The elements of organizational capital include infrastructure, information systems, routines, procedures and organizational culture (Cabrita & Vaz 2006).

Since organizational capital is codified, its creation, preservation and enhancement essentially result from structured and repetitive activities (Nelson & Winter 1982). Preserved knowledge is important for firms, as once valuable knowledge is accumulated and codified, it can be transmitted and disseminated for further use in new contexts (Sorensen & Lundh-Snis 2001). Investment in organizational capital uses up resources in order to bring about lasting improvement in productivity, worker well- being, or social performance through changes in the functioning of the organization (Tomer 1987: 24).

The organizational capital concept has great value in that it links organizational behaviour insights regarding the contribution of organizational structure, culture, climate, patterns of interaction, socialization, etc. to the innovation and productivity (Tomer, 1987). The principal role of organizational capital is to link the resources of the organization together into process that creates value for customers and sustainable competitive advantage for the firm (Dess & Picken, 1999). Having proper management of organizational capital, where by institutionalized knowledge and codified experiences are stored appropriately in database, routines, structures and readily available for members in the firm, enables the firm to utilize the knowledge and act towards successful innovations. By nature, organizational capital is codified. Structured and repetitive activities facilitate the creation, preservation and enhancement of organizational capital (Nelson & Winter 1982). The codification of organizational capital is reflected in manuals, databases, patents, structures and processes, as well as in mandated procedures and rules of how to access, share and utilize knowledge. Thus, information exchanges in organizational capital are subject to well established guidelines. The development of organizational capital relies on the establishment of knowledge storage devices and structured, recurrent practices which may lead to firm innovativeness if well managed.

Organizational capital enhances the reinforcement of prevailing knowledge and thereby influence an organization's incremental in innovative capabilities. The strength of an organization's preserved knowledge and the intrinsic worth of the course it takes can be expected to improve with the quality of the interactions, relationships, and collaborations among groups of individuals who operate with this preserved knowledge. Groups play a substantial role in deploying knowledge within organizations (Nonaka, 1994), and the

quality of group work and teams most likely not only improves how an organization's codified knowledge in patents, databases, and licenses is leveraged, but also improves how these knowledge sources are updated and reinforced.

Ghorbani *et al.*, (2012) found that there is a significant relationship between organizational capital management and organizational innovation. Also Al-Dujaili (2012) stated that organizational capital have significant influence upon organizational innovation. Allameh *et al.*, (2010) said that organizational capital positively affects organizational learning capability. Amiri *et al.*, (2011) found that organizational capital is positively related to the incremental innovation, as well as, to the radical innovation. Kamukama, *et al.*, (2010) stated that there is a strong relationship between innovation capital and structural capital, and strong association between structural capital and business performance. In the contrary, Kontic and Cabrilo (2009) concluded that product/process innovation development, as well as, research and development were not seen as key influencing factors in structural capital. While, Maria-Diez, *et al.*, (2010) said that structural capital not only empowers and strengthens human capital; it also reveals the aptitude of the organization to transmit and to store intellectual material. In addition, Gruian (2011) showed that companies with greater structural capital efficiency have better financial performance. Khalique *et al.*, (2011) showed that structural capital and customer capital have positive relationship with organizational performance. Finally, Mosavi *et al.*, (2012) concluded that companies with greater structural capital efficiency have higher ratios of market-to-book value, and have better financial performance.

While it is clear from the literature that institutionalized knowledge accumulated in and utilized through an organizations patents, databases structures systems and processes seems to help in reinforcing prevailing knowledge resulting to incremental innovation, it is not clear how having such efforts to enhance innovation might result into financial performance of insurance firms.

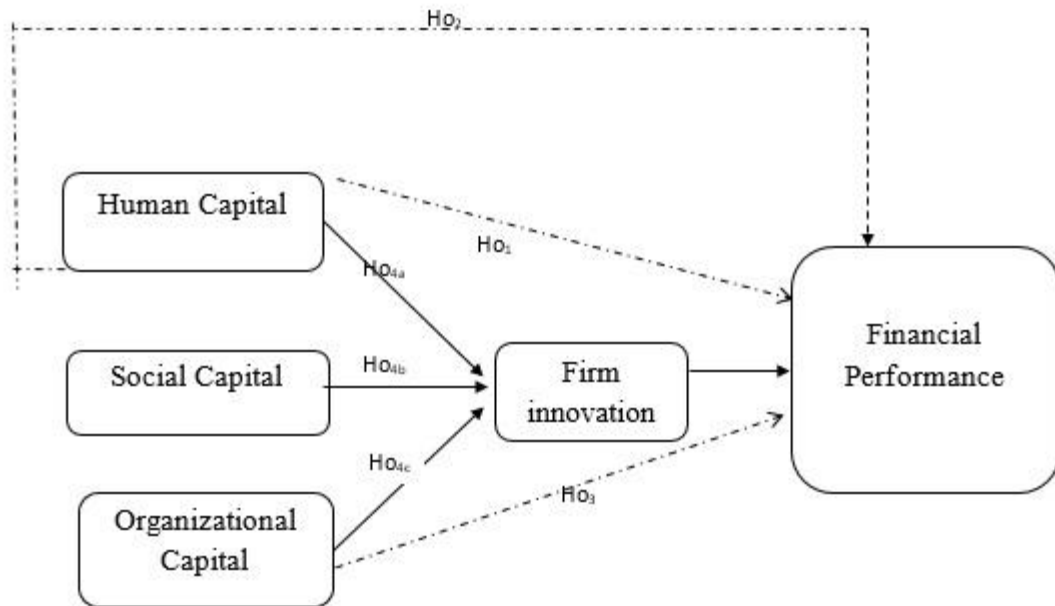
### **2.11 Conceptual Framework**

Based on the Curado and Bontis (2007) and Youndt *et al.*, (2004) this study conceptualize intellectual capital as consisting of human capital, social capital and organizational capital which are the study independent variables. Human capital is measured by a set of values, attitudes, aptitudes and capacities of employees with which they can generate the firm's value (Bontis *et al.*, 2000). Social Capital was measured by use of employees' network and relationships (Wu *et al.*, 2008; Subramaniam and Youndt, 2005). Organizational capital was measured by workflow, operational processes, know-how, business development planning, value system, cooperative culture and information and intelligence systems (Tayles *et al.*, 2007; Subramaniam and Youndt, 2005). Previous studies shows that intellectual capital influences firm innovation (Sharabati *et al.*, 2010) which is the mediating variable of the study while other studies have looked into how firms' innovation could be the result of better firms' financial performance (Huang *et al.*, 2010) which is the study dependent variable. Financial performance will be measured using the return on assets (ROA), return on equity (ROE), return on investment (ROI), profit margin, earning per share, and value per employee (Hernaus *et al.*, 2012). Figure 2.1 shows the conceptual framework of the study.

Independent variables

Mediator

Dependent Variable



**Key:**       $\longrightarrow$       Indirect effect       $\dashrightarrow$       Direct effect

**Figure 2.1 Conceptual framework**

(Source: Researcher, 2016)

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 Introduction**

This chapter covers research design, study area, target population, sampling design and sample size, data collection methods, validity and reliability of research instruments, data collection procedures and data analysis technique.

#### **3.1 Research Philosophy**

Research philosophy refers to the assumptions and beliefs that govern the way we view the world (Saunders *et al.*, 2007). It is a guideline of how data can be gathered, processed and presented to answer research questions (Saunders *et al.*, 2014). Two main research philosophical views are positivism and phenomenological perspective. Phenomenological contents that reality can only be fully understood through subjective approach (Saunders *et al.*, 2014). Further, explains that scientific enquiry can only be executed in natural environment so as to avoid possibilities of influencing study findings. Even though, scientific enquiry is prone to heterogeneous outcomes, all are deemed to have contribution power in scientific knowledge enquiry (Sekaran & Uma, 2013).

Positivism has to do with the situation where knowledge or the world is thought to exist independent of people's perceptions of it and that science uses objective techniques to discover what exist in the world (Sullivan, 2001). Positivism uses logical, quantitative, more objective scientific methods to test hypothetically deductive generalizations.

Although, it has been proved none of the research philosophy is stronger than the other, most scholars have consistently combined them so as to amplify research quality (Sekaran & Uma, 2013).

Owing to merits and demerits hailing from each research philosophy the current study was based on positivism research philosophy. Positivism was used to help researchers operationalize the concepts, formulate hypotheses which were tested during the research process and provide empirical explanations to the causes and effects relationship between variables (Saunders *et al.*, 2000; 2007; Malhotra & Birks, 2007; Cooper & Schindler, 2006). Intellectual capital and financial performance constructs as well as the mediator, firm innovation, as pertaining in Kenya's insurance industry can be examined objectively through the use of established theoretical frameworks and structured instruments upon which generalization was made from the findings.

### **3.2 Research Design**

Explanatory research design was used in this study to test causal effect between intellectual capital, firm innovation and financial performance of insurance firms in Kenya. According to Saunders *et al.*, (2007), explanatory research design is an appropriate design for studies that test causal effect between study variables. Cohen *et al.*, (1982) posited that explanatory research helps to find out the reasons behind the occurrence of a particular phenomenon. Explanatory research explains a situation or problem usually in the form of causal effect. Explanatory research design was also used when the purpose of the study is to answer 'why' in a given context. To answer 'why' in the context of effect of firm innovation on intellectual capital and financial performance of insurance firm, primary data will be collected using questionnaires.



### 3.3 Target Population

Saunders *et al.*, (2014) defines target population as a complete collection of individuals or objects with homogeneous characteristics under investigation by the researcher. From this population the research findings can be generalized. The target population of the study comprised of forty seven (47) insurance firms in Kenya (IRA, 2018). These insurance firms, as shown in Appendix III, were appropriate target population for the study because of their extensive financial service provision, they deal in intangible products, which is well suited for innovation to expedite the delivery of services and lower transaction costs resulting to financial performance (OECD, 2012).

### 3.4 Sampling Design and procedures

Sampling technique is the process of selecting a suitable sample for the purpose of determining the parameters which the researcher used to select representative respondents from the target population (Adams *et al.*, 2007). Saunders *et al.*, (2014) define sampling as a process through which a subset of the population can be selected. Accordingly, sampling process should ensure that a true representative of the target population is selected (Cooper & Schindler, 2014). The Yamane, (1973) sample size calculation formula was used to arrive at a sample size of 42 insurance firms as follows;

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = Sample size

N = Population size

e = the error of Sampling

This study allowed the error of sampling on 0.05. Thus, sample size were as follows:

$$n = \frac{47}{1+47(0.05)^2} = 42 \text{ insurance firms}$$

Simple random sampling was used to select 42 insurance firms out of 47 available. Each insurance firm has three sections headed by head of section. The sections includes, general business, life insurance and asset management. Each section has two departments, marketing and claims departments. Purposive sampling was used to select respondents which included, 3 heads of sections and six operation managers from the 42 insurance firm, giving a total sample of 378 respondents. They were considered appropriate person to give information of interest on intellectual capital, firm innovation and financial performance of insurance firms

### **3.5 Data Types, Collection and Procedures**

#### **3.5.1 Types of data**

The study used primary data to test the mediating effect of firm innovation on intellectual capital and financial performance of insurance firms in Kenya. Primary data is the collection of original data or first-hand information for a specific purpose by a researcher (Kotler *et al.*, 2005). According to Driscoll (2011), “the ultimate objective of conducting primary research is to learn about something new that can be confirmed by others and to eliminate own biases in the process.” Extant studies on financial performance have comprehensively relied on secondary data to present an understanding of the distinct aspects of intellectual capital and innovation (Ahuja, 2000; Subramaniam & Venkatraman,

2001). The current study used primary data to examine the effect of firm innovation on intellectual capital and financial performance of insurance firms.

### **3.5.2 Data Collection Instrument**

Data collection instruments refer to the tools employed in collecting data in the study (Oso & Onen, 2008). The present study used structured questionnaires with closed ended questions to collect information on intellectual capital, firm innovation and financial performance of insurance firms in Kenya. Questionnaire is a preferred and efficient method of collecting first-hand information (Navarro-Rivera & Kosmin, 2011). Equally, questionnaires were ideal for this study because of their suitability to collect information that is not directly observable such as opinions or individual experience (Gall *et al.*, 2007). Closed-ended questions guide the respondents to answer within the choices given in the instrument to ensure they stay in focus with the study objectives (Saunders *et al.*, 2014).

The questions for the variables of interest in the study were adapted from the previous developed and tested scales. However, the wording and style of presentation was modified to fit the Kenyan context. Simplifying the research instrument made it easy for the target respondents to comprehend the questions, thus, enabling them to give reliable information. Previous studies have shown that Likert-type scales and other attitude and opinion measures, use either a five or seven point response categories (Bearden & Netmeyer, 1999). For the purposes of this study, a seven point Likert scale (1 = strongly disagree to 7 = strongly agree) was developed for rating responses of independent, dependent and mediating variables. Similarly, it is possible to compare reliability coefficients of the study with other researches which have used seven -point Likert scales on similar variables (Saleh & Ryan, 1991).

### **3.6 Measurements of Variables**

#### **3.6.1 Financial performance**

Financial performance is the profitability of a business enterprise measured through various measures mostly return on assets and return on equity. It measures how well a firm is generating value for the owners (Ahmad *et al.*, 2011). Measures of Financial performance consisted of 6 items based on balance score card approach and fall in the perspective of financial performance (Atkison *et al.*, 2007). All measurement items of financial performance were based on 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). They included: our organization has had growth on net profit earnings from the business over the past five years, our company has recorded improved Return on Investment (ROI) over the last five years, our company has registered growth in turnover / sales from the business over the past five years, our company's profits have been higher compared to assets and liabilities, our organizations has registered growth in turnover compared to the competitors over the past five years

#### **3.6.2 Human Capital**

Human capital is a set of values, attitudes, aptitudes and capacities of employees with which they can generate the firm's value (Bontis *et al.*, 2000). Measurement of human capital consisted of 6 items. The human capital measures were adapted from previous studies (Bontis, 1998; Carmeli and Tishler, 2004; Jardon and Martos, 2009; Choudhury, 2010; Sharabati *et al.*, 2010). All measurement items of human capital were based on 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). They included: our employees are highly skilled, our employees are considered the best in our industry, our employees are creative and bright, our employees develop new ideas and knowledge,

our employees are experts in their particular jobs and functions and this company's employees are appropriately rewarded.

### **3.6.3 Social Capital**

The study measured social capital using 6 items based on the instrument from Tarus and Sitienei (2016), Wu *et al.*, (2008) and Subramaniam and Youndt (2005). The items were on a likert scale of 1–7 (1 = strongly disagree to 7 = strongly agree) which included “our employees share information and ideas with colleagues for better performance; our company is characterized by personal friendship among colleagues; knowledge sharing among the employees is considered normal in our firm; employees in our company are enthusiastic about pursuing collective goals; the company provides the necessary support and resources to enable employees share ideas and knowledge and our company supports and encourages employees to share knowledge with persons outside the organization.”

### **3.6.4 Organizational Capital**

For measuring organizational capital, defined as workflow, operational processes, know-how, business development planning, value system, cooperative culture and information and intelligence systems. The respondents were asked to express their opinions regarding a total of 6 questions adopted from Tayles *et al.*, (2007) as well as Subramaniam and Youndt (2005), which originally drew upon the core ideas of the social structure literature (Burt, 1997), on a range of questions in relation to their organization's emphasis on intellectual capital. All the items were quantified using the seven-point Likert-type scale (1: strongly disagree, 7: strongly agree). They included, “knowledge artifacts (data, documents e.t.c) are stored and indexed in data bases in our organization, our company

culture contains valuable ideas and ways of doing business, our company's database is updated promptly whenever new information or data is created, our company encourages free talks and discussion between colleagues, the system and procedures in our organization is flexible and efficient and our organization embeds much of its knowledge and information in structures systems and processes.”

#### **3.6.4 Firm innovation**

Based on instrument used by Wu *et al.*, (2008), Subramaniam and Youndt (2005) and Tarus and Sitienei (2015), innovation was measured using (6) items which include “our company is usually the first to introduce new products and services in the market; our company extends number of products line, our company improves old products and make it functional, our company launches customized products according to market demand and our company's new product/ service introduction has increased in the last years and our company's innovation achievement is high. All measurement items of firm innovation were based on 7-point Likert scales, ranging from 1 (Strongly disagree) to 7 (Strongly Agree).

### **3.7 Validity and Reliability of the Research Instrument**

#### **3.7.1 Validity of the Research Instrument**

Validity refers to the degree to which a statistical instrument measures what it is intended to measure. There are two types of validity, namely: internal or external. External validity: This refers to the extent to which the findings and results of a study could be generalized to other particular research settings and other sample. In this work, to ensure

external validity, the findings and results will be generalized to the Kenyan settings, and to other developing country context, and specifically to the insurance industry.

In this study the following kinds of internal validity were ensured. Face validity ensured in this study since it seemed logical to the study to measure and analyze financial performance with intellectual capital using a questionnaire-based survey. For this study, the questionnaire for this study was given to two supervisors to review its content validity. This study, the questionnaire developed was compared with other similar validated intellectual capital instruments used in several studies. This ensured that the items in the questionnaire favorably compares with the validated ones.

In this work, construct validity ensured by deriving the dimension of intellectual capital and the dimensions of firm performance from existing literature. Convergent and discriminant validity: Straub *et al.*, (2004) maintain that the two main aspects of *Construct Validity*, being, *convergent Validity* and *discriminant validity*, can be deduced from the Factor analysis, specifically, Confirmatory Factor Analysis (CFA) results. Bartlett's test of sphericity tests the hypothesis that the correlation matrix is an identity matrix, which would indicate that the variables are unrelated and therefore unsuitable for structure detection. Small values (less than 0.05) of the significance level indicate that a factor analysis may be useful with the data.

Factor analysis basically involves four stages (Hair *et al.*, 2006): First, the preparation of correlation matrix, which is the number in the main diameter of the matrix called communality. This was followed by factor extraction which refers to getting the main factors that have caused changes in the proposed variable. This may be done through

commonly used methods like the principal component analysis, maximum likelihood and Principal Axis Factoring; Un-weighted Least Square, among others. Selection and rotation of factors was follow whereby the factors loads for each item in the factor matrix show the role or amount of correlation each question item in a special dimension relates to that question. The final step is interpretation where the results of factor analysis are required was interpreted

### **3.7.2 Reliability of the Research instrument**

Reliability refers to extent to which a measurement instrument is able to yield consistent results each time it is applied under similar conditions. It is the constituent of a measurement device that causes it to yield similar outcome or results for similar inputs. Statistically, reliability is defined as the percentage of the inconsistency in the responses to the survey that is the result of differences in the respondents. This implies that responses to a reliable survey varied because respondents have different opinions, not because the questionnaire items are confusing or ambiguous. Reliability could be estimated mathematically or through pre-testing of the instruments. In this study, since the questionnaire items was adopted from previous studies but tailored to the insurance service context, it was prudent to conduct a pilot test to refine the instrument. As a result, the questionnaire items were pilot tested to remove confusing words and to improve upon the clarity of the questions items to strengthen its reliability. The pilot study was conducted from 10 banks which are in the same sector with insurance firms. Again, statistically, the Cronbach's alpha could also be used to assess the reliability of an instrument. A reliability values of 0.6 to 0.70 and above are considered by many researchers as acceptable (Cooper & Schindler, 2006; Malhotra & Birks, 2006).



### 3.8 Data Analysis and presentations

Data obtained from the field was coded, cleaned, and entered into the computer for analysis using the SPSS and AMOS. The data was summarized in order to see emerging trends and issues around specific themes, which are dependent on the variables and objectives. The researcher compounded scores from indicators for the variables to obtain the scores respectively. According to Parveen and Leonhauser (2004) the compounding of scores from various indicators into indices is based on an integration of both qualitative and quantitative methods depending on collected data. Descriptive statistical procedures included frequency distributions were used to provide comparisons and contrasts between intellectual capital, firm innovation and financial performance.

The study used Structural Equation Modeling (SEM) because this study is dealing with multiple-item constructs, a situation where maximum likelihood covariance-based SEM tools reach their limit (Michael and Andreas, 2004). SEM normally starts with a hypothesis, develops it as a model, operationalizes the constructs of interest with a measurement instrument, and tests the fit of the model to the obtained measurement data. A mediation analysis was performed using the Baron and Kenny (1986) causal steps approach; in addition a bootstrapped confidence interval for the indirect effects was obtained using procedure described by Preacher and Hayes (2008). The raw data for the variables were inputted into AMOS software to generate the iterations, goodness- of -fit indices and standardized paths in order to generate structural equation model.

$$\text{Financial Performance} = \beta_0 + \beta(\text{Human Capital, Social Capital, organisation Capital}) + \varepsilon \dots \dots \dots (1)$$

$$\text{Financial Performance} = \beta_0 + \beta_1(\text{Human Capital, Social Capital, organisation Capital}) + \beta_2(\text{Firm Innovation}) + \varepsilon \dots\dots\dots (2)$$

Where;  $\beta = (\beta_i, \beta_{ii}, \beta_{iii}, \dots)$  coefficients for human capital, Social capital and organisation capital,

### 3.10 Ethical Considerations

The ethical issues considered while undertaking this research included seeking approvals, enabling voluntary participation, ensuring safety of participants, guaranteeing of anonymity, confidentiality, avoiding deception, analysing and reporting of the findings. To obtain access to the chosen institutions, a letter seeking permission to conduct the study from the National Commission for Science, Technology and Innovation (NACOSTI) was submitted to the life insurance companies. This letter was accompanied with an introduction letter from Moi University, a copy of questionnaire with a cover page explaining the importance of the study and expected findings. All institutions surveyed would be given a copy of the study findings if they would be interested. Informed consent of each participant was sought by the researcher before their participation. The privacy of the participant was assured by not identifying the individual responses and keeping the questionnaires and data under lock and key accessed by the researcher alone. There was no harm to the respondents because the study was not practical in nature. To avoid deception the researcher identified himself with the respondents by sharing his contact details in case of any queries.

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION AND INTERPRETATION

#### 4.1 Introduction

This chapter presents the analysis, presentation and interpretation of the mediating effect of firm innovation on intellectual capital and financial performance of insurance firms in Kenya. Specifically the study sought to establish; effect of human capital, social capital and organization capital on firm innovation of insurance firms, the mediating effect of firm innovation on human capital, social capital and organization capital and financial performance of insurance firms. Both descriptive and inferential statistics were used to analyze the data. The chapter is organized as follows: response rate, descriptive analysis, reliability and validity analysis, correlation analysis, hypotheses testing and discussion of the study findings.

#### 4.2 Response Rate

Data was collected from employees working with insurance firms in Kenya. A total 378 questionnaires were issued of which 334 were filled and returned and represented a response rate of 88.36%. The response rate was considered satisfactory since Nyamjom, (2013) argues that a response rate of 75% was considered excellent and a representative of the population. The achieved response rate of 88.36% in the current study was high and implied that the response rate was very good. The success rate was attributed to the self-administration of the questionnaires applied by the researcher from which the intended respondents were pre-notified prior to the date of data collection from which the researcher agreed on the actual date for the data questionnaire administration. Follow-up calls to

clarify queries were made thus enhancing the high response rate. The response rate is represented in table 4.1

**Table 4.1: Response Rate Questionnaire**

	<b>Count</b>	<b>Percentage</b>
Returned	334	88.36%
Non returned	44	11.64%
<b>Total</b>	<b>372</b>	<b>100</b>

Source: *Research Data, (2018)*

### **4.3 Data Screening and Cleaning**

The data screening and cleaning process normally involves an inspection of the collected data and correction (or removal) of any errors that potentially can cause substantial impacts on the analysis results (Osborne, 2013). It often includes an examination of missing values, identification of substantial errors, management of raw data for an appropriate use of the analysis and assessment of normality and outliers (Tabachnick & Fidell, 2014).

#### **4.3.1 Examination of missing data**

First, the study identified and rectified missing values in the dataset. It is generally suggested that researchers may remove particular cases if they have more than 50 per cent of values missing (Hair *et al*, 2010). These cases can create substantial impacts on the rest of the observations (Tabachnick & Fidell, 2014). Following this suggestion, the study omitted the cases with more than 50 per cent of missing values.

After removing these cases, the study also treated the cases with less than 50 per cent of missing values. For the treatment of such missing values, three options are often suggested (Pallant, 2011): Listwise exclusion: totally removing the case from the analysis if any data

are missing in that case; Pairwise exclusion: removing the case only when they are missing the data required for specific analysis; Replacing with mean: calculating the mean value for the variables and applying it to the missing value. Among these techniques, this study adopted a pairwise exclusion option in consideration of its advantages. The advantages include: that the option has fewer problems with convergence; the factor loading estimates are relatively free of bias; and the option is easy to implement by using any statistical program (Hair *et al.*, 2010).

#### **4.3.2 Examination for Outliers**

Outliers refer to cases or observations with values for variables or combinations of variables that are substantially different from those in other cases or observations (Byrne 2010; Hair *et al.*, 2010). Outliers can be said not to be representative of the population. They can distort statistical tests, and thus work counter to the objectives of a research study. Outliers can be checked from a univariate, bivariate and multivariate perspective. This research performed a multivariate test for outliers, as the study uses a multivariate analysis that investigates for multivariate outliers that have extreme scores on two or more variables. This is as opposed to a univariate outlier that has an extreme score on a single variable (Kline 2010, 2005). A common approach to the detection of multivariate outliers is the computation of the squared Mahalanobis distance ( $D^2$ ) for each case (Hair *et al.*, 2010). This statistic measures the distance in standard deviation units between a set of scores for one case and the sample means for all variables.  $D^2$  assesses the extent of the dissimilarity of each observation or case (in terms of its distance from the mean center of all observations) across a set of variables. An outlying case (the higher  $D^2$  values relative to the other cases) will have a  $D^2$  value that stands distinctively apart from all the other  $D^2$

values. As a rule of thumb, Hair *et al.*, (2010) suggested identifying any case in which the D2/df value exceeds three or four in large samples (where the sample size is >200) as an outlier

Following Hair *et al.*, (2010) suggestions, the dataset were examined for the presence of multivariate outliers using D2 as a measure of distance, and computed D2/df.

As shown in Table 4.2, the D2/df values of case 15 and case 130 are equal to or exceeding three, suggesting they are outlying cases. Thus, these two cases were dropped from further analysis. In summary, the analysis for the presence of multivariate outliers identified two cases as outliers and dropped them from further analysis. Thus, only the remaining 332 cases are used in all subsequent analyses to be performed as part of this study.

**Table 4.2: Multivariate Outlier Test Results**

Case	D2	D2/df(df=116)	Case	D2	D2/df(df=116)
15	411.2	3.5	56	283.02	2.36
130	346.18	3	161	279.4	2.33
34	291.17	2.43	203	270.24	2.25
25	288.5	2.4	11	259.21	2.16
95	287.2	2.39	35	258	2.5

Source: *Research Data, (2018)*

#### **4.4 Descriptive Analysis for Independent, Mediating and Dependent Variables**

Descriptive analysis was used to describe the basic features of the data under the study as they provide summaries about the sample and its measures. In the current study descriptive analysis included means, standard deviation, frequencies, percentages and graphical presentations. The mean was used as a measure of central tendency while standard deviation was used as a measure of dispersion to inform how the responses were dispersed

from the mean. Normality was then assessed using skewness and Kurtosis (Tabachnick & Fidell, 2007). The distribution across the variable was considered to be normally distributed if skewness and kurtosis values fell between -20.0 to 3.0. Skewness and kurtosis values for the variable in the study were within the acceptance range. Normality assumption was therefore considered to have been met.

#### **4.4.1 Financial Performance**

Respondents were asked to indicate on a seven-point Likert scale their level of agreement on several statements describing the performance of insurance firms. Descriptive statistics such as mean and standard deviation were jointly used to summarize the responses as presented in Table 4.2. The study findings showed that most of the respondents agreed that company's returns basing on the level of investment has enabled organization realized high profits as shown by a mean of 5.724. However most of them agreed that organization had greater value of assets than its net income (5.533), with company's investments always yielded a positive return (5.431), company's profits have been higher compared to assets and liabilities (5.404) and company's net income has increased at a higher rate than available finances (5.141)

**Table 4.3: Financial Performance**

	<b>Mean</b>	<b>Std. Deviation</b>	<b>Skewness</b>	<b>Kurtosis</b>
Our organization has had growth on net profit earnings from the business over the past five years	5.5329	1.04714	-0.711	0.246
Our company has recorded improved Return on Investment (ROI) over the last five years	5.1407	1.25009	-0.797	-0.023
Our company has registered growth in turnover / sales from the business over the past five years	5.4311	1.17521	-1.045	2.176
Our company's profits have been higher compared to assets and liabilities	5.4042	1.32705	-1.029	1.031
Our organization has registered growth in turnover compared to the competitors over the past five years	5.4012	1.17307	-0.766	-0.028
Our company's returns basing on the level of investment has enabled organization realize high profits	5.7246	1.19138	-1.105	0.882
<b>Financial Performance</b>	<b>5.4391</b>	<b>0.88849</b>	<b>-0.598</b>	<b>-0.232</b>

Source: *Research Data, (2018)*

Findings of the study indicated that responses to the 6 statements used to measure financial performance of insurance firms ranged between the mean of 5.14 and 5.72, with the overall mean being 5.44. This shows that majority of the respondents were in agreement with the statements that were used to measure financial performance of insurance firms.

#### **4.4.2 Human Capital**

In this study, respondents were asked to indicate on a seven-point Likert scale their level of agreement on several statements describing the influence of human capital in insurance



firms in Kenya. The study findings was summarized in Table 4.3, which showed that most of the respondents agreed that their employees were highly skilled and were creative and bright as shown by a mean of 5.458. Moreover, most of the respondents indicated that employees were experts in their particular jobs and functions as accounted for by a mean of 5.659. The employees were considered the best in the industry with a mean of 5.467 and company's' employees were appropriately rewarded had a mean of 5.556.

**Table 4.4 Human Capital**

	<b>Mean</b>	<b>Std. Deviation</b>	<b>Skewness</b>	<b>Kurtosis</b>
Our employees are highly skilled	5.4581	1.51956	-1.069	-.009
Our employees are considered the best in our industry	5.4671	1.31421	-.910	-.045
Our employees are creative and bright	5.4581	1.25072	-1.252	.589
Our employees develop new ideas and knowledge	5.3293	1.49852	-.952	.065
Our employees are experts in their particular jobs and functions	5.6587	1.21192	-1.062	.798
This company's employees are appropriately rewarded	5.5569	1.41466	-1.128	1.062
<b>Mean</b>	<b>5.4880</b>	<b>.96538</b>	<b>-1.004</b>	<b>.184</b>

Source: *Research Data, (2018)*

From the findings of the study, it is noted that responses to the 6 statements used to measure human capital ranged between the mean of 5.33 and 5.65, with the overall mean being 5.49. This shows that majority of the respondents were in agreement with the statements that were used to measure human capital.

#### **4.4.3 Social Capital**

Respondents were asked to indicate on a seven-point Likert scale their level of agreement on several statements describing the social capital in insurance firms in Kenya. Descriptive statistics such as mean and standard deviation were jointly used to summarize the responses

as presented in Table 4.4. The study findings showed that most of the respondents agreed that company's knowledge sharing among employees is considered normal in our company as shown by a mean of (6.045). However, company is characterized by personal friendship among employees had a mean of (5.865), employees share information and ideas with colleagues for better performance (5.781), company provided the necessary support and resources to enable employees share ideas and knowledge (5.751), company supports and encourages employees to share knowledge with persons outside the organization (5.682) and employees in the company were enthusiastic about pursuing collective goals had a mean of (5.506).

**Table 4.5: Social Capital**

	Mean	Std. Deviation	Skewness	Kurtosis
Our employees share information and ideas with colleagues for better performance	5.7814	1.31181	-1.734	3.39
Our company is characterized by personal friendship among employees	5.8653	1.1323	-2.155	6.341
Knowledge sharing among employees is considered normal in our company	6.0449	1.04022	-1.523	2.15
Employees in our company are enthusiastic about pursuing collective goals	5.506	1.23693	-1.158	2.113
The company provides necessary support and resources to enable employees share ideas and knowledge	5.7515	1.12088	-1.442	2.619
Our company supports and encourages employees to share knowledge with persons outside the organization	5.6826	1.42938	-1.601	2.398
<b>Social Capital</b>	<b>5.772</b>	<b>0.77594</b>	<b>-0.485</b>	<b>-0.693</b>

Source: *Research Data, (2018)*

From the findings of the study, it is noted that responses to the 6 statements used to measure social capital ranged between the mean of 5.51 and 6.04, with the overall mean being 5.77. This shows that majority of the respondents were in agreement with the statements that were used to measure social capital

#### **4.4.4 Organization Capital**

Respondents were asked to indicate on a seven-point Likert- scale their level of agreement on several statements describing the organization capital in insurance firms in Kenya. Descriptive statistics such as mean and standard deviation were jointly used to summarize the responses as presented in Table 4.5. The study findings showed that most of the respondents agreed that company encourages free talks and discussions between colleagues as shown by a mean of (5.976). Moreover, they agrees that knowledge artefacts (data, documents etc.) are stored and indexed in data bases in our organization (5.704), company's database was updated promptly whenever new information or data is created (5.946), company culture contained valuable ideas and ways of doing business (5.856), company encourages free talks and discussions between colleagues (5.976), systems and procedures in their organization is flexible and efficient (5.689) and organization embeds much of its knowledge and information in structures systems and processes (5.617).

**Table 4.6: Organization Capital**

	<b>Mean</b>	<b>Std. Deviation</b>	<b>Skewness</b>	<b>Kurtosis</b>
Knowledge artefacts (data, documents etc.) are stored and indexed in data bases in our organization	5.7036	1.37727	-1.647	2.687
Our company culture contains valuable ideas and ways of doing business.	5.8563	0.97275	-0.772	0.263
Our company's database is updated promptly whenever new information or data is created	5.9461	1.02964	-1.552	3.532
Our company encourages free talks and discussions between colleagues	5.976	1.08471	-1.543	2.839
The systems and procedures in our organization is flexible and efficient	5.6886	1.34188	-1.383	1.868
Our organization embeds much of its knowledge and information in structures systems and processes	5.6168	1.11359	-0.828	0.056
<b>Organization Capital</b>	<b>5.7979</b>	<b>0.78609</b>	<b>-1.063</b>	<b>0.888</b>

Source: *Research Data, (2018)*

From the findings of the study, it is further noted that responses to the 6 statements used to measure organization capital ranged between the mean of 5.62 and 5.98, with the overall mean being 5.80. This shows that majority of the respondents were in agreement with the statements that were used to measure organization capital.

#### **4.4.5 Firm Innovation**

Respondents were asked to indicate on a seven-point Likert scale their level of agreement on several statements describing the firm innovation in insurance firms in Kenya. Descriptive statistics such as mean and standard deviation were jointly used to summarize the responses as presented in Table 4.6. The study findings showed that most of the respondents agreed that the company extends number of product lines and company's new

product/ service introduction has increased in the last years as shown by a mean of (5.707). Moreover, the company launches customized products according to market demand (5.835), company is usually the first to introduce new products and services in the market (5.087), company improve old products and make it functional (5.503) and company's innovation achievement is high (5.593).

**Table 4.7: Firm Innovation**

	Mean	Std. Deviation	Skewness	Kurtosis
Our company is usually the first to introduce new products and services in the market	5.0868	1.32257	-0.686	0.172
Our company extends number of product lines	5.7066	0.95742	-0.623	0.239
Our company improve old products and make it functional	5.503	1.37927	-1.239	1.448
Our company launches customized products according to market demand	5.8353	1.05401	-1.447	2.228
Our company's new product/ service introduction has increased in the last years.	5.7066	1.09496	-1.04	1.492
Our company's innovation achievement is high.	5.5928	1.22857	-1.257	2.374
<b>Firm Innovation</b>	<b>5.5719</b>	<b>0.81945</b>	<b>-0.448</b>	<b>-0.12</b>

Source: *Research Data, (2018)*

The findings of the study indicated that responses on the 6 statements used to measure firm innovation in insurance firms ranged between the mean of 5.08 and 5.83, with the overall

mean being 5.57. This shows that majority of the respondents were in agreement with the statements that were used to measure firm innovation in insurance firms.

#### **4.5 Reliability Analysis**

Reliability is the extent to which a variable is consistent in what was supposed to measure (Hair *et al.*, 2006). A research instrument is reliable if after being administered to different groups of respondent's yields consistent results. Reliability of the items for the study was assessed by determining the items' Cronbach's alpha coefficients. The Cronbach's alpha measures reliability using coefficient ranging between 0 to 1. The instruments were considered reliable if their reliability coefficients were above the recommended 0.7 threshold (Fraenkel & Wallen, 2000). The generally acceptable level of Cronbach's alpha is above 0.70 and it may decrease to 0.60 in exploratory research (Hair *et al.*, 2006) and the desired minimum level of Cronbach's alpha for this study was 0.70.

The study findings depicted that the Cronbach's Alpha of 0.722 was obtained from the 6 statements explaining human capital, 0.706 was obtained from the 6 statements explaining social capital, 0.762 was obtained from the 6 statements explaining organization capital, 0.784 was obtained from the 6 statements explaining firm innovation and 0.837 was obtained from the 6 statements explaining financial performance of insurance firms. Since all the coefficients were above 0.7 as shown in Table 4.7, the instruments were considered reliable as their reliability coefficients were above the recommended 0.7 threshold (Fraenkel & Wallen, 2000). As such based on Nunnally and Bernstein (1994) all items were therefore retained for further analysis.

**Table 4.8: Reliability Analysis**

<b>Variables</b>	<b>Cronbach's Alpha</b>		
	<b>Cronbach's Alpha</b>	<b>Based on Standardized Items</b>	<b>No. of Items</b>
Human capital	0.722	0.706	6
Social capital	0.706	0.702	6
Organization capital	0.762	0.759	6
Firm innovation	0.784	0.78	6
Financial performance	0.837	0.834	6

Source: *Research Data, (2018)*

#### **4.6 Factor Analysis for Testing Validity of the Constructs**

Validity refers to the extent to which a research instrument measures what it was intended to measure (Zikmund *et al.*, 2010). Prior to using the questionnaire for data collection the researcher discussed it with the supervisors and colleagues. Since the researcher self-administered the questionnaire she encouraged the respondents to express their opinion on the clarity of the questions in the questionnaire. The respondent's opinion was used to improve the research instrument for the final study. In addition, Kaiser-Meyer-Olkin measures of sampling adequacy (KMO) and Bartlett's test of sphericity were applied to test whether the correlation between the study variables exist. Kaiser- Meyer- Oklin was used as a measure of sampling adequacy.

Factor analysis was employed in this regard to help in identifying the actual number of factors that actually measured each construct as perceived by the respondents. The validity of the instrument was measured through Bartlett's Test of Sphericity (Muhammad, 2009). The principal component analysis with varimax rotation was conducted on all variables to extract factors from the scales of each construct. Based on the previous works of (Hair *et al.*, 2006) all items loading below 0.50 were deleted and those with more than 0.50 loading



factor retained (Daud, 2004). All items were well loaded into their various underlying variable structure of dimensions. After performing the factor analysis of each variable, the statement responses were summed to create a score and subjected to subsequent analysis.

#### 4.6.1 Factor Analysis for Human Capital

The factor analysis results of human capital, indicated that the KMO was 0.823 and the Bartlett's Test of sphericity was significant ( $p < .05$ ) (Table 4.8). The Varimax Rotated Principle Component resulted in two factor loading on human capital variable that explained 70.89 % of variance with Eigen Values larger than 1. The resultant 6 items had loadings greater than threshold value of 0.50. It was, therefore, concluded that human capital can be measured by 6 items and were used in subsequent analysis.

**Table 4.9 Factor Analysis for Human Capital**

	1	2
Our employees are highly skilled	0.865	
Our employees are considered the best in our industry	0.878	
Our employees are creative and bright	0.806	
Our employees develop new ideas and knowledge	0.735	
Our employees are experts in their particular jobs and functions	0.679	
This company's employees are appropriately rewarded		0.977
<i>Kaiser-Meyer-Olkin</i>	0.823	
<i>Bartlett's Test of Sphericity (df=15)</i>	0.000	
<i>Total Variance Explained</i>	70.89	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Source: *Research Data, (2018)*

#### 4.6.2 Factor Analysis for Social Capital

Social capital was subjected to factor analysis. From (Table 4.9) the results indicated that the KMO was 0.689 and the Bartlett's Test of sphericity was significant ( $p < .05$ ). When

rotated using Varimax and Kaiser Normalization it reveals that six items were loaded on the two components and explained 61.86% of the total variance. It was therefore concluded that social capital was measured by six items used in subsequent analysis. All the statements retained, for further analysis.

**Table 4.10: Factor Analysis of Social Capital**

	1	2
Our employees share information and ideas with colleagues for better performance	0.863	
Our company is characterized by personal friendship among employees		0.783
Knowledge sharing among employees is considered normal in our company	0.792	
Employees in our company are enthusiastic about pursuing collective goals	0.614	
The company provides necessary support and resources to enable employees share ideas and knowledge		0.856
Our company supports and encourages employees to share knowledge with persons outside the organization	0.566	
<i>Kaiser-Meyer-Olkin</i>	.689	
<i>Bartlett's Test of Sphericity (df=15)</i>	0.000	
<i>Total Variance Explained</i>	61.86	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Source: *Research Data, (2018)*

#### 4.6.3 Factor Analysis for Organization Capital

The factor analysis results of organization capital (Table 4.10), indicated that the KMO was 0.768 and the Bartlett's Test of sphericity was significant ( $p < .05$ ). The Varimax Rotated Principle Component resulted in two factor loading on human capital variable that explained 67.98 % of variance with Eigen Values larger than 1. The resultant 6 items had loadings greater than threshold value of 0.50. It was, therefore, concluded that organization capital can be measured by 6 items and were used in subsequent analysis.

**Table 4.11: Factor Analysis of Organization Capital**

	1	2
Knowledge artefacts (data, documents etc.) are stored and indexed in data bases in our organization	0.838	
Our company culture contains valuable ideas and ways of doing business.	0.719	
Our company's database is updated promptly whenever new information or data is created	0.689	
Our company encourages free talks and discussions between colleagues	0.828	
The systems and procedures in our organization is flexible and efficient		0.828
Our organization embeds much of its knowledge and information in structures systems and processes		0.799
Kaiser-Meyer-Olkin	.768	
Bartlett's Test of Sphericity (df=15)	0.000	
Total Variance Explained	67.98	
Extraction Method: Principal Component Analysis.		
Rotation Method: Varimax with Kaiser Normalization.		
Source: <i>Research Data, (2018)</i>		

#### 4.6.4 Factor Analysis of Firm innovation

Firm innovation was subjected to factor analysis and one component with Eigen Values greater than 1 were extracted which cumulatively explained 48.93% of variance as shown in (Table 4.11). The firm innovation indicated that the KMO was 0.764 and the Bartlett's Test of sphericity was significant ( $p < .05$ ). When rotated using Varimax with Kaiser Normalization revealed that six items were loaded into one component that explain 48.93% of the total variance. It was therefore concluded that firm innovation was measured by six items used in subsequent analysis. All the statements retained for further analysis.

**Table 4.12: Factor Analysis of Firm innovation**

	1
Our company is usually the first to introduce new products and services in the market	0.78
Our company extends number of product lines	0.77
Our company improve old products and make it functional	0.749
Our company launches customized products according to market demand	0.598
Our company's new product/ service introduction has increased in the last years.	0.697
Our company's innovation achievement is high.	0.574
<i>Kaiser-Meyer-Olkin</i>	.764
<i>Bartlett's Test of Sphericity (df=15)</i>	0.000
<i>Total Variance Explained</i>	48.93

Extraction Method: Principal Component Analysis.  
Source: *Research Data, (2018)*

#### 4.6.5 Factor Analysis of Financial performance

The study results in Table 4.12 shows factor analysis results for firm performance. It indicated that the KMO was 0.828 and the Bartlett's Test of sphericity was significant ( $p < .05$ ). When rotated using Varimax with Kaiser Normalization revealed that six items were loaded into one component that explain 55.30% of the total variance. It was therefore concluded that firm performance was measured by six items used in subsequent analysis. All the statements were retained for further analysis.

**Table 4.13 Factor Analysis of Financial performance**

	1
Our organization has had growth on net profit earnings from the business over the past five years	0.635
Our company has recorded improved Return on Investment (ROI) over the last five years	0.788
Our company has registered growth in turnover / sales from the business over the past five years	0.68
Our company's profits have been higher compared to assets and liabilities	0.851
Our organization has registered growth in turnover compared to the competitors over the past five years	0.808
Our company's returns basing on the level of investment has enabled organization realize high profits	0.674
<i>Kaiser-Meyer-Olkin</i>	.828
<i>Bartlett's Test of Sphericity (df=15)</i>	0.000
<i>Total Variance Explained</i>	55.30

Extraction Method: Principal Component Analysis.

Source: *Research Data, (2018)*

#### **4.7 Confirmatory Factor Analysis (Measurement Model)**

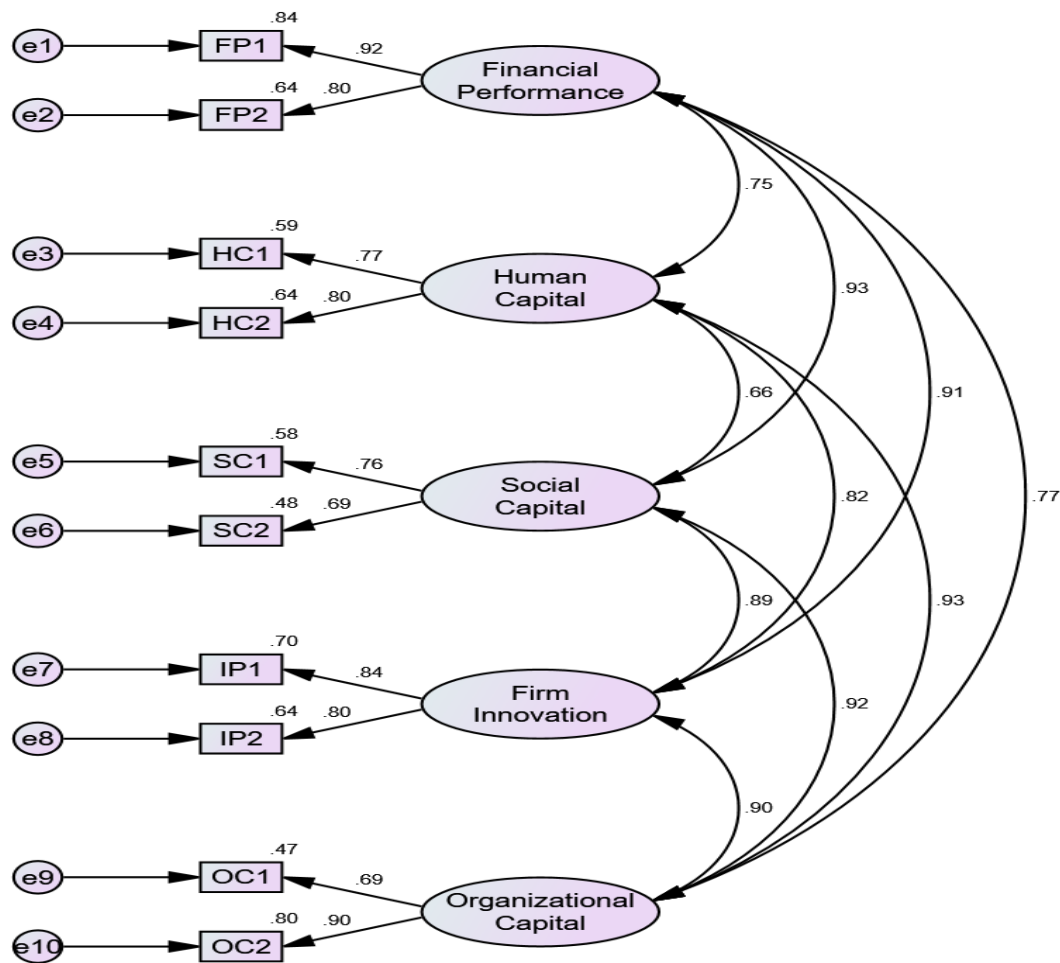
Using Amos 7.0, the Confirmatory Factor Analysis (CFA) was performed to the multiple-item scales of human, social and organizational capital. Confirmatory factor analysis, as used in this thesis, was to confirm a proposed analytical model, as opposed to creating one through exploration of data. The observable indicator variables were entered into the factor analysis. The resulting factors generated indicated the distinctive factors that underpin one or more of the measured variables. The factors generated were then compared with the latent variables in the proposed model, looking to confirm or otherwise the viability of the proposed model. The Confirmatory Factor Analysis was used to provide credibility for the proposed analytical model.

Table 4.13 shows different types of goodness of fit indices in assessing this study initial Specified model. The results of the Confirmatory Factor Analysis indicated that the chi-square ( $\chi^2$ ) value of the model was 1768.682, with 725 degrees of freedom ( $p < 0.05$ ), which implies that the measurement did fit the data well. The other model fit indices used for this study were, Tucker-Lewis Index (TLI) of 0.948, Comparative Fit Index (CFI) of 1, Normed Fit Index of .926 and the Root Mean Square Error of Approximation (RMSEA) of 0.041. Based on these fit indices, the measurement model appeared to fit the sample data well (Hair *et al.*, 2006). Thus, it is concluded that the measures for the study were valid and internally consistent.

**Table 4.14 Confirmatory Factor Analysis Results**

<b>Fit Index</b>	<b>Test Value</b>	<b>Std. Value</b>	<b>Result</b>
Chi Square ( $\chi^2$ )	30.05	P-value < 0.05	Good fit
NFI	.926	>0.9	Good fit
CFI	1	>0.9	Good fit
TLI	0.947	>0.9	Good fit
RMSEA	0.041	<0.05	Good fit

Source: *Research Data, (2018)*



**Figure 4.1: Model Measurement**

**Source:** *Research Data, (2018)*

#### 4.8 Test of Assumptions

Before a complete analysis can be performed, the assumptions concerning the original data must be made (Sevier, 1957). Ignoring the regression assumptions contribute to wrong validity estimates (Antonakis, & Deitz, 2011). When the assumptions are not met, the results may result in Type I or Type II errors, or over- or under-estimation of significance of effect size (Osborne & Waters, 2002). Meaningful data analysis relies on the researcher's understanding and testing of the assumptions and the consequences of

violations. Regression analysis requires at least two independent variables, which can be nominal, ordinal, or interval/ratio level variables. The assumptions of regression analysis that are identified as primary concern in the research include linearity, independence of errors, homoscedasticity, normality, and collinearity.

#### **4.8.1 Normality**

Multiple regression assumes that variables have normal distributions (Darlington, 1968; Osborne & Waters, 2002). This means that errors are normally distributed, and that a plot of the values of the residuals will approximate a normal curve (Keith, 2006). The assumption is based on the shape of normal distribution and gives the researcher knowledge about what values to expect (Keith, 2006). Non-normally distributed variables can distort relationships and significance tests (Osborne & Waters, 2002). Outliers can influence both Type I and Type II errors and the overall accuracy of results (Osborne & Waters, 2002).

The researcher tests this assumption through several pieces of information: visual inspection of data plots, skew, kurtosis, and P-Plots (Osborne & Waters, 2002). Data cleaning was also important in checking this assumption through the identification of outliers. Statistical software has tools designed for testing this assumption. Skewness and kurtosis can be checked in the statistic tables, and values that are close to zero indicate normal distribution.

To identify the shape of the distribution in the study, Kolmogorov-Smirnov and Shapiro Wilks' Tests were used (Shapiro and Wilk, 1965) which were calculated for each variable. Normality could be detected by looking at the p-value of Kolmogorov-Smirnov-test and Shapiro Wilk-test. In this respect if the p-value (Sig. value) of the Shapiro-Wilk Test is



greater than 0.05, the data is normal. If it is below 0.05, the data significantly deviate from a normal distribution. Therefore since the p-values for all the variables were more than 0.05, then normality of the data was confirmed. Lilliefors significance correction which is used to test that data comes from a normally distributed population was applied. The alternative hypothesis was rejected and it was concluded that the data came from a normal distribution. This also agreed with the findings of the skewness and kurtosis results discussed in construction of variables which suggested normality of data which ranged from -1.96 to +1.96. The results from these tests are shown in (Table 4.14) that all the variables were not significant, which meets the assumptions of normality.

**Table 4.15 Test for Normality for the Variables**

Variable	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Financial performance	0.259	334	.200*	0.946	334	0.674
Human capital	0.186	334	.200*	0.893	334	0.29
Social capital	0.233	334	.200*	0.86	334	0.121
Organizational capital	0.203	334	.200*	0.892	334	0.211
Firm innovation	0.225	334	.200*	0.92	334	0.531

\* This is a lower bound of the true significance.

a. Lilliefors Significance Correction

*Source: Research Data, (2018)*

Normality was further checked through histograms of the standardized residuals (Stevens, 2009). Histograms are bar graphs of the residuals with a superimposed normal curve that show distribution. Figure 4.2(see appendices) was an example of histogram with normal distribution from the SPSS software. Q-plots and P-plots were a more exacting methods to spot deviations from normality, and are relatively easy to interpret as departures from a straight line (Keith, 2006). Figure 4.4 shows a P-Plot with normal distribution from the SPSS software.

### **4.8.2 Linearity**

Linearity defines the dependent variable as a linear function of the predictor (independent) variables (Darlington, 1968). Multiple regression accurately estimated the relationship between dependent and independent variables when the relationship is linear in nature (Osborne & Waters, 2002). The chance of non-linear relationships is high in the social sciences, therefore it is essential to examine analyses for linearity (Osborne & Waters, 2002). If linearity is violated all the estimates of the regression including regression coefficients, standard errors, and tests of statistical significance may be biased (Keith, 2006). If the relationship between the dependent and independent variables is not linear, the results of the regression analysis will under- or over- estimate the true relationship and increase the risk of Type I and Type II errors (Osborne & Waters, 2002). Linearity was tested with the SPSS following the accepted procedures. The decision rule applied was that if the value of significant deviation from linearity is  $> 0.05$ , then the relationship between the independent and dependent variables is said to be linearly related. However, the reverse was true if the value  $< 0.05$ .

**Table 4.16 Linearity Tests**

		<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Performance *	(Combined)	198.299	22	9.014	43.411	0.00
Human	Linearity	107.264	1	107.264	516.603	0.00
	Deviation from Linearity	91.036	21	4.335	20.878	0.08
Performance *	(Combined)	164.517	17	9.677	31.092	0.00
Social	Linearity	122.902	1	122.902	394.864	0.00
	Deviation from Linearity	41.615	16	2.601	8.356	0.07
Performance *	(Combined)	132.777	17	7.81	18.971	0.00
Organization	Linearity	93.596	1	93.596	227.342	0.00
	Deviation from Linearity	39.18	16	2.449	5.948	0.09
Performance *	(Combined)	193.24	19	10.171	45.862	0.00
Innovation	Linearity	153.545	1	153.545	692.384	0.00
	Deviation from Linearity	39.695	18	2.205	9.944	0.10

Source: *Research Data, (2018)*

Residual plots showing the standardized residuals vs. the predicted values and are very useful in detecting violations in linearity (Stevens, 2009). The residuals magnify the departures from linearity (Keith, 2006). If there is no departure from linearity you would expect to see a random scatter about the horizontal line. Any systematic pattern or clustering of the residuals suggests violation (Stevens, 2009). Figure 4.3 in the appendix visually demonstrates both linear and curvilinear relationships.

### **4.8.3 Homoscedasticity**

The assumption of homoscedasticity refers to equal variance of errors across all levels of the independent variables (Osborne & Waters, 2002). This means that researchers assume that errors are spread out consistently between the variables (Keith, 2006). This is evident when the variance around the regression line is the same for all values of the predictor variable. Homoscedasticity was checked by visual examination of a plot of the standardized residuals by the regression standardized predicted value (Osborne & Waters, 2002). The Levene's statistic for equality of variances was used to test for the assumption of

homoscedasticity. Violation of homoscedasticity of variance is confirmed if the Levene's test statistic is found to be significant (alpha level of 0.05). As shown in Table 4.18 the Levene's statistics were above 0.05 (Martin and Bridgmon, 2012). The assumption of homoscedasticity of variance in this study was therefore supported.

**Table 4.17 Levene's Test for Homoscedasticity**

	<b>Levene Statistic</b>	<b>df1</b>	<b>df2</b>	<b>Sig.</b>
Human	1.365	39	289	0.081
Social	1.446	39	289	0.069
Organization	1.446	39	289	0.098
Innovation	0.885	39	289	0.668
Performance	1.757	39	289	0.105

Source: *Research Data, (2018)*

#### **4.8.4 Multicollinearity**

Collinearity (also called multicollinearity) refers to the assumption that the independent variables are uncorrelated (Keith, 2006). Multicollinearity occurs when several independent variables correlate at high levels with one another, or when one independent variable is a near linear combination of other independent variables (Keith, 2006). The researcher is able to interpret regression coefficients as the effects of the independent variables on the dependent variables when collinearity is low (Keith, 2006). This means that inferences are made about the causes and effects of variables reliably. The more variables overlap (correlate) the less able researchers can separate the effects of variables. In multiple regressions the independent variables are allowed to be correlated to some degree (Hoyt *et al.*, 2006). Ideally, independent variables are more highly correlated with the dependent variables than with other independent variables.

Statistical software packages include collinearity diagnostics that measure the degree to which each variable is independent of other independent variables. The effect of a given level of collinearity can be evaluated in conjunction with the other factors of sample size,  $R^2$ , and magnitude of the coefficients (Mason & Perreault Jr., 1991). Widely used procedures examine the correlation matrix of the predictor variables, computing the coefficients of determination,  $R^2$ , and measures of the Eigen values of the data matrix including variance inflation factors (VIF) (Mason & Perreault Jr., 1991). Tolerance measures the influence of one independent variable on all other independent variables. Tolerance levels for correlations range from zero (no independence) to one (completely independent) (Keith, 2006).

Tolerance and VIF statistics were used to carry out the diagnosis. The results of the multicollinearity test in Table 4.16 reveal that the tolerances of the four constructs ranged from 0.35 to 0.5. VIF scores ranged from 2 to 2.86. The results were within normal bounds, indicating multicollinearity was not present among the explanatory variables. The assumption on multicollinearity was deemed to have been met. The VIF is an index of the amount that the variance of each regression coefficient is increased over that with uncorrelated independent variables (Keith, 2006). When a predictor variable has a strong linear association with other predictor variables, the associated VIF is large and is evidence of multicollinearity (Shieh, 2010). The rule of thumb for a large VIF value is ten (Keith, 2006; Shieh, 2010). Small values for tolerance and large VIF values show the presence of multicollinearity (Keith, 2006).

**Table 4.18 Collinearity statistics**

	<b>Tolerance</b>	<b>VIF</b>
Human	0.5	2
Social	0.464	2.153
Organization	0.35	2.857
Innovation	0.383	2.608

Source: *Research Data, (2018)*

#### **4.9 Correlation Analysis of the Variables**

Before performing the Structural Equation Modeling analysis, correlation analysis was done in order to check whether there was association between variables and also check whether there was multicollinearity among the variables. Pearson product moment correlation coefficient ( $r$ ) was used to aid in establishing correlation between the study variables of interest. Correlation coefficient shows the magnitude and direction of the relationship between the study variables. The study sought to find out the relationship between independent variables, mediator and dependent variable. The study findings depicted that there is a significant positive relationship between human capital and performance of insurance firms ( $r=.639$ ,  $\rho < .05$ ) as shown in Table 4.18. Therefore, an increase in human capital will lead to an increase in performance insurance firms. There was a significant positive relationship between social capital and performance insurance firms ( $r= .684$ ,  $\rho < .05$ ). Therefore, an increase in social capital led to an increase in performance insurance firms. . Results of the study showed that there was a significant positive relationship between organization capital and performance of insurance firms ( $r=.597$ ,  $\rho < .05$ ). This implies that a higher level of organization capital is related to higher levels of performance in insurance firms.

There was a significant positive relationship between human capital and firm innovation in insurance firms ( $r = .641, p < .05$ ). This implies that a higher level of human capital is related with higher levels of innovation in insurance firms. There was a significant positive relationship between social capital and firm innovation ( $r = .662, p < .05$ ). This implies that as social capital increased the firm innovation of insurance firms rises. Also there was a significant positive relationship between organizational capital and firm innovation in insurance firms ( $r = .713, p = 0.00$ ). This implies that an increase in organization capital improved the innovation in insurance firms.

The study findings showed that there is a significant positive relationship between firm innovation and performance insurance firms ( $r = .764, p = 0.000$ ). This implies that as firm innovation increases the performance insurance firms also rises. The most influential factor in relation to performance of insurance firms was social capital followed by human capital and finally organization capital since it had the highest correlation coefficients. It is important to note that firm innovativeness improved performance in insurance firms more than to the extent of human and social capital does. This agrees with Ghorbani *et al.*, (2012) that there is a relationship between parameters of intellectual capital management (social capital, organizational capital, human capital) and organizational innovation. This finding is consistent with Seleim *et al.*, (2007) and Maditinos *et al.*, (2011) who found that human capital indicators had a positive relationship with organizational performances.

**Table 4.19 Correlation Analysis of the Variables**

	<b>Performance</b>	<b>Human</b>	<b>Social</b>	<b>Organization</b>	<b>Innovation</b>
Performance	1				
Human	.639**	1			
Social	.684**	.456**	1		
Organization	.597**	.659**	.684**	1	
Innovation	.764**	.641**	.662**	.713**	1

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

b. Listwise N=334

Source: *Research Data, (2018)*

#### 4.10 Testing of Hypotheses

Having described the study variables using descriptive statistics the study sought to establish the mediating effect of firm innovation on intellectual capital and financial performance of insurance firms in Kenya. The inferential statistics were used to test the null hypothesis for possible rejection or acceptance. The 5% level of significance was taken as the level of decision criteria whereby the null hypothesis was rejected if the p-value was more than 0.05 and accepted if otherwise. The study used Structural Equation Modeling (SEM) to test hypotheses. Typically, a hypothesized model was tested with a linear equation system through SEM using AMOS graphics. It was more versatile than other multivariate techniques as it allowed simultaneous, multiple dependent relationships between variables. The raw data for the variables were inputted into the AMOS software to generate the iterations, goodness-of-fit indices and standardized paths in order to generate structural equation models. In addition, a bootstrapped confidence interval for the indirect effects was obtained using procedures described by Preacher and Hayes (2008). SEM normally starts with a hypothesis, develops it as a model, operationalizes the constructs of interest with a measurement instrument, and tests the fit of the model to the obtained measurement data.



**Table 4.20 Estimates of Effect of Intellectual Capital on Financial Performance in Insurance Firms**

<b>Structural Paths</b>	<b>estimates</b>	<b>S.E</b>	<b>C.R</b>	<b>P</b>
Financial Performance ← Human Capital	.308	.084	3.667	0.00
Financial performance ← Social Capital	.858	.070	12.306	0.00
Financial Performance ← Organization Capital	.035	.090	.391	0.00

*H<sub>01</sub>: There is no significant effect of human capital on financial performance*

The study hypothesized that there is no significant effect of human capital on financial performance of insurance firms. From the findings there is a positive significant relationship between human capital and financial performance in insurance firms ( $\beta = .308$ ,  $\rho < .05$ ). A unit increase in human capital led to an increase in financial performance in insurance firms by 0.308. Therefore null hypothesis (**H<sub>01</sub>**) was rejected and the study concludes that there is a significant relationship between human capital and financial performance of insurance firms. The findings agree with Chadwick (2007) that the importance of human capital in enhancing financial performance depends on the degree to which it contributes to the creation of a competitive advantage. It concurs with Seleim, Ashour, and Bontis (2007) that the human capital indicators had a positive association on organizational performances. This agrees with Choudhury, (2010) that organizations with a higher level of human capital have better financial performance. The concept of Human Capital is that, people that possess skills, experiences and knowledge contribute to an increase in firms' financial performance because management of knowledge is considered an important antecedent to performance (Bantel & Jackson, 1989). Creativity, intelligence and skills of employees in specific industry constitutes the major source of new ideas and knowledge in their organizations which facilitates the generation of high financial performance

*H<sub>02</sub>: There is no significant effect of social capital on financial performance*

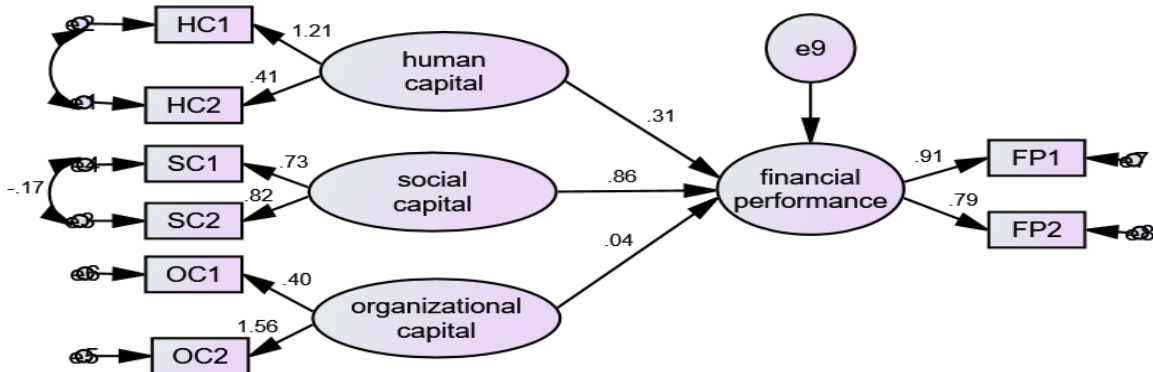
The study hypothesized that there is no significant influence of social capital on financial performance in insurance firms. The results depicted that there was a positive significant relationship between social capital and financial performance in insurance firms ( $\beta=.858$  and  $\rho < .05$ ). A unit increase in social capital leads to an increase in financial performance of insurance firms by 0.858. The null hypothesis (**H<sub>02</sub>**) was rejected and the study concludes that there is a significant effect of social capital on financial performance. Social capital leads to increase of confidence and high levels of trust among employees (Tsai & Huang, 2008). Such an association inspires idea and knowledge exchange among employees, which is more expected to inspire high financial performance in firms (Subramaniam & Youndt, 2005). Furthermore, Kogut and Zander (1992) maintain that richer firm-internal communication contributes to a faster accumulation of new technological knowledge, which could lead to high financial performance.

*H<sub>03</sub>: There is no significant effect of organizational capital on financial performance*

The study hypothesized that there is no significant influence of organization capital on financial performance in insurance firms. The results depicted that there was a positive significant influence between organization capital and financial performance in insurance firms ( $\beta=.035$  and  $p < .05$ ). A unit increase in organization capital led to an increase in financial performance of insurance firms by 0.524. The null hypothesis (**H<sub>03</sub>**) was rejected and the study concluded that organization capital has a significant influence on financial performance in insurance firms. According to Ghorbani *et al.*, (2012) organization capital positively affect organizations performance. Established processes and routines leverage

an organizations preserved knowledge resulting to positive performance capabilities (Yang & Konrad, 2011). Organization capital is an important factor that is directly linked to corporate performance knowledge available in systems, files, databases, patents or licenses, which is important for implementation of innovation because such knowledge is the outcome of routine activities of employees, reminds usage process, flexible to be used for new contexts and more importantly it develops technological skills of employees. Preserved knowledge broadens the technological skills of employees and facilitates the integration of new and diverse knowledge into the firm's existing knowledge (Zahra et al., 2000).

The effects of intellectual capital on financial performance are summarized in path diagram, as indicated in Figure 4.3.



*Chi square ( $\chi^2$ ) = 101.47, ( $P < 0.01$ ), Normed Fit Index = .940, Comparative Fit index = .921, Tucker Lewis Index = .901, Root Mean Square Error of Approximation = .032*

**Figure 4.3 SEM for Effect of Intellectual Capital on Financial Performance**

#### **4.11 PLS-SEM for Mediating Effect of Innovation on Intellectual Capital and Financial Performance**

The study established the mediating effect of innovation on intellectual capital and financial performance of insurance firms. A mediation analysis was performed using the Baron and Kenny (1986) causal-steps approach; In this method, the following conditions must be met in the results to support mediation: The independent variable should significantly influence the dependent variable, independent variable should significantly influence the mediator and the mediator should significantly influence the dependent variable when both the independent variable and mediator are predictors of the dependent variable. Complete mediation is present when the independent variable no longer influences the dependent variable after the mediator has been controlled and all of the above conditions are met. Partial mediation occurs when the independent variable influence on the dependent variable is reduced after the mediator is controlled.

These results were also compared to the guidelines suggested by (Kenny, 1998; Hair *et al.*, 2006; Preacher and Hayes; 2008; Zhao *et al.*, 2010): Run the direct model of independent variable on depended variables, with all independent variables and dependent variables but without the mediator variables, and assess its overall fit and the significance of the direct relationship 'c'. Assuming that the direct model provides an acceptable fit and the direct effect is significant, run the indirect model , independent variables, mediators and the dependent variables, with all the variables and assess its overall fit. Assuming that the indirect model provides an acceptable or better fit than the direct model, conduct the bootstrapping test and examine the significance of the direct effect , independent variable and mediator 'path a', direct effect of mediator and dependent variable 'path b', and

indirect effect 'a\*b'. Assuming that paths 'a' and 'b' are significant, the mediation effect is confirmed if the results of the bootstrapping test showed that the value of the indirect effect 'a\*b' is different from zero and the p-value is significant. If *c'* is closer to zero compared to *c* and non-significant, one can conclude that the mediating variable completely mediates the effect between independent variable and dependent variable. On the other hand, if *c'* is still significant the researcher concludes there is partial mediation of independent variable on dependent variable.

**Table 4.21 Estimates of mediating effect of Firm Innovation on the relationship between Intellectual Capital and Financial Performance**

<b>Structural Paths</b>	<b>Estimate</b>	<b>S.E</b>	<b>C.R</b>	<b>P</b>
<b>Direct Model</b>				
Financial Performance ← Human Capital	.308	0.084	3.667	.000
Financial Performance ← Social Capital	.858	.070	12.306	.000
Financial Performance ← Organization Capital	.035	.090	0.391	.000
<b>Indirect Model</b>				
Innovation ← Human Capital	.833	.057	15.233	.000
Financial Performance ← Innovation	.707	.052	13.718	.000
Financial Performance ← innovation ← Human Capital	.215	.037	5.76	.000
Innovation ← Social Capital	.860	.148	6.771	.000
Financial Performance ← firm Innovation	.742	.106	7.001	.000
Financial Performance ← Innovation ← Social Capital	.728	.071	10.221	.000
Firm Innovation ← Organization Capital	.979	.089	11.045	.000
Financial Performance ← Firm Innovation	.363	.047	7.647	.000
Financial Performance ← Innovation ← Organization Capital	.701	.076	9.213	.012

Source: *Research Data, (2018)*

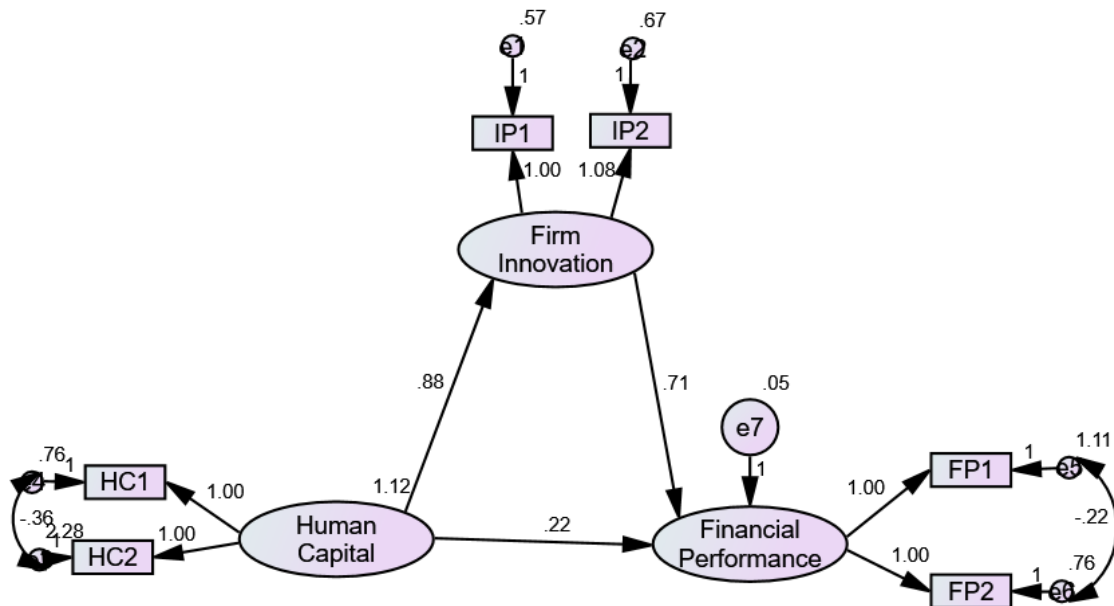
***Firm innovation does not mediate the effect human capital on financial performance of insurance firms.***

The study hypothesized that firm innovation does not mediate the effect of human capital on financial performance of insurance firms. The study findings postulates that human capital had a significant influence on financial performance ( $\beta=.308$ ,  $\rho=.000$ ), human capital was shown to have a significant influence on firm innovation ( $\beta=.883$ ,  $\rho=.000$ ) and that firm innovation had a significant influence on financial performance ( $\beta=.215$ ,  $\rho=.000$ ) when both human capital and firm innovation are predictors of financial performance. The value of  $\beta$  which shows the effect of human capital on financial performance after inclusion of firm innovation ( $\beta=.215$ ,  $\rho=.000$ ) became smaller than the previous value of ( $\beta=.308$ ,  $\rho=.000$ ) before introducing the mediator. Based on the results of SEM analysis it is shown that firm innovation met the criteria as a mediating variable.

In order to verify the above results, the study conducted bootstrapping as per the table 4.19. The regression weight estimates for indirect effect (.833\*.707) is .589 and the regression weight for direct effect is ( $\beta=.215$ ,  $\rho=.000$ ). Therefore it can be concluded that the type of mediation for this model is partial mediation. The study reject hypothesis (***H<sub>04a</sub>***) and infers that firm innovation partially mediates the relationship between human capital and financial performance of insurance firms. This shows that the higher the firm innovation in insurance firms, human capital will highly increase financial performance. This is true because, better human capital facilitates knowledge exploration and integration, which may generate critical inputs to the research and development efforts resulting to innovation (Lahiri, 2010). Therefore, firms can better develop their employees to become agile, well-informed, competent, and effectively manage both existing and new knowledge residing

within these employees (Soo *et al.*,2017) and by doing so, it result into better innovativeness hence better financial performance.

The total effects on mediating role of firm innovation on human capital and financial performance is summarized in path diagram, as indicated in Figure 4.4.



Chi square ( $\chi^2$ ) = 73.888 ( $P < 0.01$ ), Normed Fit Index = .934, Comparative Fit index = .967,

Tucker Lewis Index = .954, Root Mean Square Error of Approximation = .041

**Figure 4.4 SEM for mediating effect of firm innovation on human capital -Financial Performance relationship**

*Firm innovation does not mediate the effect of social capital on financial performance of insurance firms*

The study hypothesized that, firm innovation does not mediate the effect of social capital on financial performance of insurance firms. The study findings postulates that social

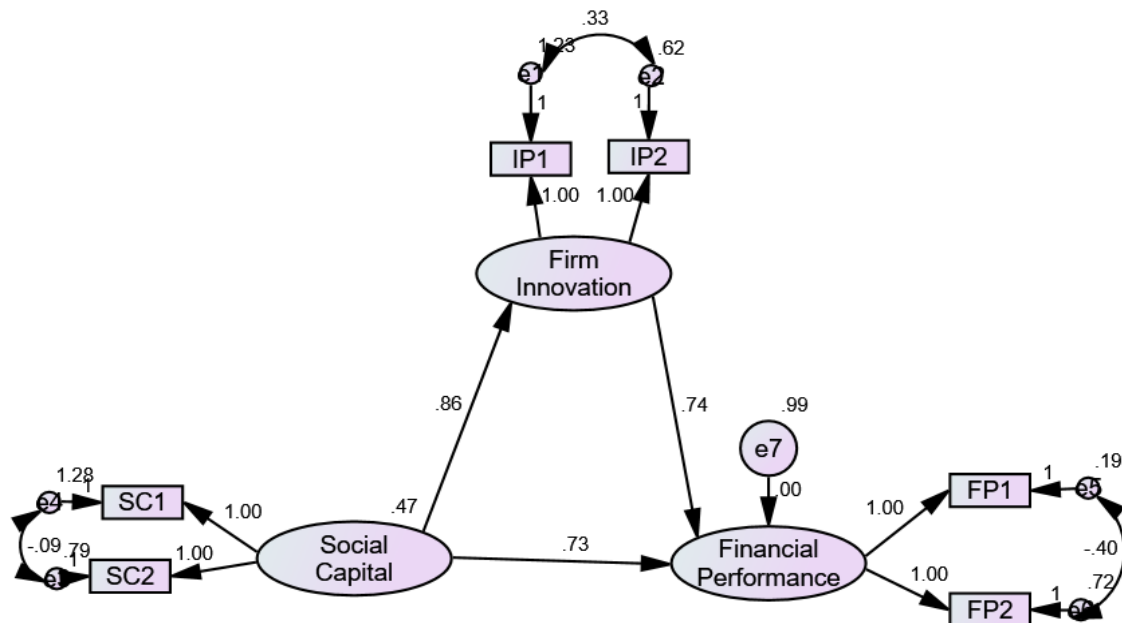
capital significantly predicts financial performance ( $\beta=.855$ ,  $\rho=.000$ ). In addition, the beta value estimate indicate that social capital is an important predictor of firm innovation ( $\beta=.860$ ,  $\rho=.000$ ), furthermore, firm innovation is significantly related to financial performance when both the social capital and firm innovation are predictive of financial performance ( $\beta=.728$ ,  $\rho=.000$ ). Thus, this condition suggested that there exists a mediation effect on the hypothesized relationship under this study since the coefficient relating social capital to financial performance ( $\beta=.858$ ,  $\rho=.000$ ) is larger than the coefficient relating social capital to financial performance with both social capital and firm innovation predicting financial performance ( $\beta=.728$ ,  $\rho=.000$ ).

These results were verified by conducting bootstrapping as per the Table 4.19. The indirect effect, through firm innovation was computed as the product of the path coefficient from social capital to firm innovation and the path coefficient from firm innovation to financial performance ( $.860*.742=.638$ ). The direct effect when the mediator (firm innovation) was introduced was only .728 and significant. Therefore, this study concludes that there is a partial mediation. The null hypothesis (**H<sub>04b</sub>**) was rejected and the study infers that firm innovation partially mediates the effect of social capital and financial performance of insurance firms. Yokakul et al., (2011) stated that, the innovative capabilities of individuals in a firm and those of the firm have a strong mediating role toward social capital in its relationship with business performance. Laursen *et al.*, (2012) reasons that social capital had an influence on firm's innovative capabilities. Social capital enables organizations to quickly perceive customer demands and market changes, thus forming a resource delivery network to share and provide resources for innovation. Social capital theory emphasizes the relationship between a corporate organization and its suppliers. In order to better realize



the ideas and arrangements for innovation, organizations need to rely on the cooperation and collaboration of suppliers (Lau *et al.*, 2010 & Joshi, 2017). Organisations possess the informal relationship and connections that facilitate collaboration and knowledge exchange, which are both fundamental for innovation. The innovation built through such exchanges and new knowledge, increases firms' performance outcomes. In addition, innovative organisations could exploit their social capital to share and test ideas, identify new opportunities and detect trends in business environment changes hence improving on their performance.

The total effects on mediating role of firm innovation on social capital and financial performance is summarized in path diagram, as indicated in Figure 4.5.



*Chi square* ( $\chi^2$ ) = 38.801 ( $P < 0.01$ ), *Normed Fit Index* = .943, *Comparative Fit index* = .956, *Tucker Lewis Index* = .927, *Root Mean Square Error of Approximation* = .038

**Figure 4.5 SEM for mediating effect of Firm Innovation on Social Capital-Financial Performance Relationship**

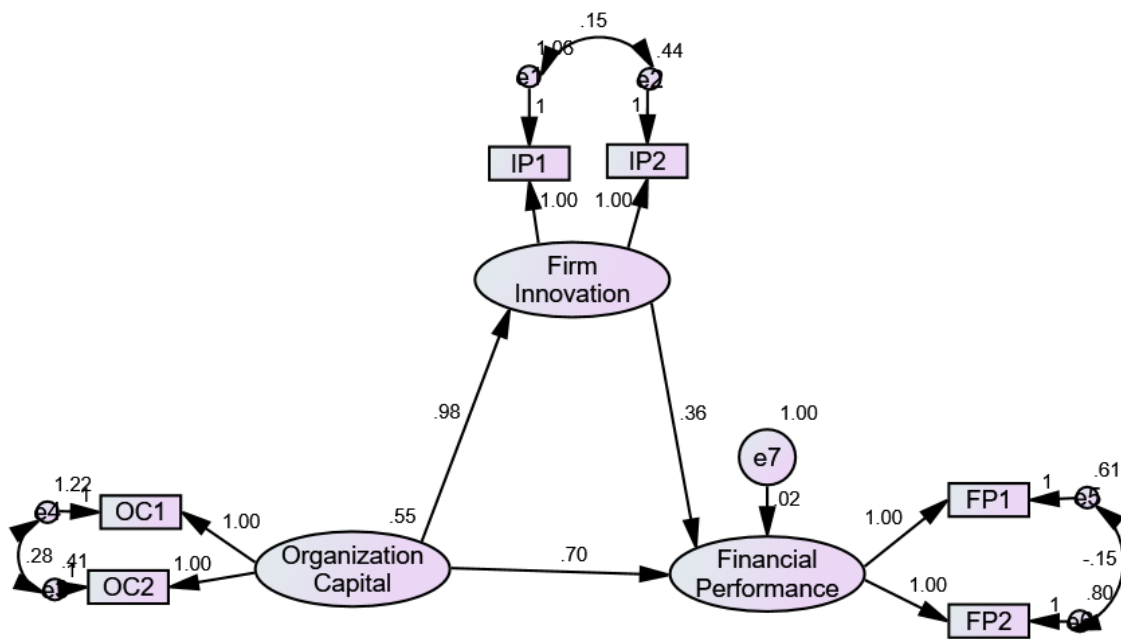
***Firm innovation does not mediate the effect of organizational capital on financial performance of insurance firms***

The study hypothesized that firm innovation does not mediate the effect of organization capital on financial performance of insurance firms. The study findings postulates that direct relationship between organization capital and financial performance was significant at ( $\beta=.035$ ,  $\rho=0.000$ ). The direct relationship between organization capital and firm innovations is significant at ( $\beta=.979$ ,  $\rho=0.000$ ), and that firm innovation had insignificant influence on financial performance ( $\beta=.0701$ ,  $\rho= 0.012$ ) when both organization capital and firm innovation are predictors of financial performance. Based on the results of the SEM analysis it is shown that firm innovation met the criteria as a partial mediating variable.

In order to verify the above results, the study conducted bootstrapping as per the table 4.19. The indirect effect, through firm innovation, is computed as the product of the path coefficient from organization capital to firm innovation and the path coefficient from firm innovation to financial performance. The regression weight estimates for indirect effect (.979\*.363) is .355 as shown in Fig 4.5, and the direct effect when the firm innovation was introduced was only .701 and significant. Thus, this study concludes there is partial mediation. The null hypothesis ( $H_{04c}$ ) was rejected and the study established that firm innovation partially mediate the effect of organization capital and financial performance. This results are consistent with the results of (Kuo and Yang, 2012), who stated that organization capital have a significant effect on the value creation and company performance. This is true because organization capital is knowledge available in systems, files, databases, patents or licenses which is important for adoption of innovation. Such

knowledge is the outcome of routine activities of employees which develops technological skills of employees and facilitates the integration of new and diverse knowledge into the firm’s existing knowledge (Zahra et al., 2000) resulting to innovation and hence improved financial performance of firms.

The total effects on mediating effect of firm innovation on organization capital and financial performance is summarized in path diagram, as indicated in Figure 4.6



*Chi square (  $\chi^2$  ) = 45.733 (  $P < 0.01$  ), Normed Fit Index = .941, Comparative Fit index = .966, Tucker Lewis Index = .937, Root Mean Square Error of Approximation = .04*

**Figure 4.6 SEM for mediating effect of Firm Innovation on Organizational Capital-Financial Performance Relationship**

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter presents the summary of the study findings as guided by the specific objectives and also the conclusion. Recommendations as well as direction for future research as per the findings were also presented for intellectual capital, firm innovation and financial performance of insurance firms in Kenya.

#### 5.2 Summary of Findings

To achieve this primary data was collected through the use questionnaires. Data collected was then analyzed using both descriptive (mean, standard deviation, frequency and percentage) and inferential statistics (structural equation model) to explain the causal effect between variables.

The study hypothesized that there is no significant effect of human capital on financial performance of insurance firms. The study findings depicted that there was a positive significant effect of human capital on financial performance in insurance firms ( $\beta=.308$  and  $\rho < .05$ ). The null hypothesis (**H<sub>01</sub>**) was rejected and the study concluded that human capital has a significant effect on financial performance in insurance firms. Higher human capital means higher ability of learning by doing and thus improves firm financial performance. Furthermore, when the number of skilled labor increases financial performance will also improve. From Resource based view, human capital is one of the most important resources of firms and through it we can be able to differentiate firms. Kozlowski, (2000) revealed that, when sufficient investments are made by organizations to train their employees it

increases their abilities and potential to work hence increase financial performance. In a similar vein, Josan (2013) established that human capital increases organizational effectiveness which is categorized as competitiveness, excellence and performance.

The study hypothesized that there is no significant effect of social capital on financial performance in insurance firms. The study findings depicted that there was a positive significant relationship between social capital and financial performance in insurance firms ( $\beta=.858$  and  $p < .05$ ). The null hypothesis ( $H_0$ ) was rejected and the study concluded that social capital has a significant effect on financial performance in insurance firms. Social capital presents an organization's ability to interact among the employees and external collaborators. Such associations inspires ideas and knowledge exchange among employees which result to improved processes, products /services and solutions among firms (Subramaniam & Yuoundt, 2005) resulting to financial performance. It also demonstrates channel for sharing and exchange of knowledge (Lu *et al.*, 2012). The better the social capital, the higher the propensity to increase financial performance within a firm. Carmona-Lavado *et al.*, (2010) espoused that, when the relationship becomes closer among people, they are more willing to support and facilitate the development of innovative ideas. Social capital leads to increase of confidence and high levels of trust among employees (Tsai and Huang, 2008). The trust within the organization lessens the need for rigid control system (Quinn, 1979), which enhances generation and sharing of ideas and information in the organization hence high firm innovation.

The third hypothesis stated that there is no significant effect of organization capital on financial performance in insurance firms. The study findings depicted that there was a

positive significant effect of organization capital on financial performance in insurance firms ( $\beta = .035$  and  $\rho < .05$ ). The study rejected the null hypothesis (**H<sub>03</sub>**) and concluded that there is significant influence of organization capital on firm financial performance. Organization capital is linked to organization knowledge available in systems, files, databases, patents or licenses which is important because such knowledge is the outcome of routine activities of employees, repeat usage process, flexible to be used for new contexts and more notably, it develops technological skills of employees. Preserved knowledge widens the technological skills of employees and enables the incorporation of new and diverse knowledge into the firm's prevailing knowledge (Zahra *et al.*, 2000) which may result in higher firm financial performance.

The study hypothesized that there is no significant effect of firm innovation on human capital and financial performance of insurance firms. The study findings reveal that firm innovation partially mediates the effect of human capital on financial performance of insurance firms ( $\beta = .215$ ,  $\rho < .05$ ). The study rejected the null hypothesis (**H<sub>04b</sub>**) and concluded that there is significant influence of firm innovation on human capital and financial performance of insurance firms. This shows that the higher the firm innovation in insurance firms, human capital will highly increase financial performance. This is true because, better human capital facilitates knowledge exploration and integration which may generate critical inputs to the research and development efforts resulting to innovation (Lahiri, 2010). Therefore, firms can better develop their employees to become agile, well-informed, and competent, and effectively manage both existing and new knowledge residing within these employees (Soo *et al.*, 2010) by so doing, they will be able to increase firm innovation hence improved financial performance

The study hypothesized that there is no significant effect of firm innovation on social capital and financial performance of insurance firms. The results of the study indicates that firm innovation significantly predicts financial performance when both the social capital and firm innovation are predictive of financial performance ( $\beta=.728$ ,  $\rho<.05$ ). The study rejected the null hypothesis (**Ho4b**) and concluded that firm innovation partially mediates the effect of social capital on financial performance of insurance firms. This shows that the higher the firm innovation in insurance firms, social capital will highly increase financial performance. Social capital enables organizations to quickly perceive customer demands and market changes, thus forming a resource delivery network to share and provide resources for innovation. Social capital theory emphasizes the relationship between a corporate organization and its suppliers. In order to better realize the ideas and arrangements for innovation, organizations need to rely on the cooperation and collaboration of suppliers (Lau *et al.*, 2010 and Joshi, 2017).

The study hypothesized that there is no significant effect of firm innovation on organization capital and financial performance of insurance firms. The results of the study depicts that firm innovation significantly predicts financial performance when both the organization capital and firm innovation are predictors of financial performance, ( $\beta=.701$ ,  $\rho<.05$ ). The study rejected the null hypothesis (**Ho4c**) and concluded that firm innovation partially mediates the effect of organization capital on financial performance of insurance firms. This shows that the higher the firm innovation in insurance firms, organization capital will highly increase financial performance. This is true because organization capital is knowledge available in systems, files, databases, patents or licenses which is important for adoption of innovation. Such knowledge is the outcome of routine activities of employees

which develops technological skills of employees and facilitates the integration of new and diverse knowledge into the firm's existing knowledge (Zahra *et al.*, 2000) resulting to innovation and hence improved financial performance of firms. Organization capital leads to the accumulation of knowledge, the creation of sustainable economic value and has core benefits

### **5.3 Conclusion**

The study set out to investigate whether innovation mediates the effect of intellectual capital on financial performance. The intention was to offer an alternative explanation for the inconclusive and sometimes conflicting empirical results of the relationship between intellectual capital, firm innovation and financial performance in the literature. The findings broadly support the fact that intellectual capital components (i.e, human capital, social capital and organization capital) positively influence financial performance of insurance firms. The study also found out that firm innovation plays a partial mediating role in the effect of different dimensions of intellectual capital and financial performance i.e, human capital, social capital and organization capital).

The findings support some of the existing theoretical arguments and empirical results in the existing literature of intellectual capital, firm innovation and financial performance. The results lend strong support to the existing theoretical arguments that the innovation is one of the key benefits of human capital (Bantel and Jackson, 1989). In today's rapidly dynamic environment, supportive human capital with high education, expertise and skills tend to improve cognitive abilities of employees which improves innovative skills. It can therefore be concluded that a firm's human capital is an important source of firm innovation. As such, investments in the human capital of the workforce may increase the



productivity of the employees and innovation results. Human capital is gaining significant importance since tangible assets are no longer a viable option in gaining competitive advantage in the knowledge-based economy. This clearly indicates that focus is on the absorption of a knowledgeable workforce as they will respond swiftly to the changes that the external environment presents resulting in innovation performance.

The study also concluded that, social capital of an organization is also a key component for firm financial performance. This infers that better and closed embedded relations with customers and suppliers help to improvise new products with minimal cost which tend to influence innovative performance of firms. In actual fact, the better the social capital within a firm, the higher the ability to collaborate with its partners, and the higher the tendency to increase financial performance. The depth and richness of these connections builds a sustainable pool of knowledge and opportunities that is needed for higher financial in organization.

It can also be concluded that organizational capital being knowledge which is accumulated and stored in databases, proceedings, patents, licenses, trademarks, manuals and organizational structures is also a key aspect in firm financial performance. It refers to the intellectual asset that remain even after employees have left the company. It does not depend on individuals and is generally explicit (Hormiga *et al.*, 2011). Strong and unique organization capital in terms of effective routines procedures and processes provide a potential source for innovative performance in organizations.

The study also concluded that firm innovation mediates the effect of human capital on financial performance of insurance firms. When insurance firms increase their

innovativeness then they can cause human capital to increase financial performance. To create human capital insurance firms should recruit and retain outstanding people, who have good level of education, experience and training to create value to the firm. This employees should have good qualities like creativity, innovation, uniqueness and proactive which are the most pertinent attributes for innovation. For insurance companies, their abilities to innovate, assess and develop internal and external knowledge would provide distinctive competitive advantage which results to better financial performance.

The study also concluded that firm innovation mediates the effect of social capital on financial performance of insurance firms. When insurance firms increase their innovativeness, it causes social capital to increase financial performance of insurance firms. Promoting activities that are positively linked to trust among creative people can encourage cooperation and information sharing among the innovators resulting to improved financial performance.

The study also concluded that firm innovation mediates the effect of organizational capital on financial performance of insurance firms. When insurance firms increase their innovativeness it result in organizational capital increasing financial performance in insurance firms. Innovative firms have organization knowledge available in systems, files, databases, patents or licenses which is important because such knowledge is the outcome of routine activities of employees, repeat usage process, flexible to be used for new contexts and more notably, it develops technological skills of employees. Preserved knowledge widens the technological skills of employees and enables the incorporation of

new and diverse knowledge into the firm's prevailing knowledge which may result in higher firm financial performance.

## **5.4 Recommendation of the Study**

### **5.4.1 Policy Recommendation**

It is recommended from the study that, Government regulation should not be restrictive but should instead be geared towards providing an enabling environment for the insurance industry to thrive in innovation while at the same time protecting the customers. Effective self-regulation through the established professional bodies like Association of Kenya Insurers (AKI) is highly recommended because they understand the environment through which insurance companies operate in, thus, required innovations. Continuous innovation is required in areas of product development, effective distribution channels and service delivery platforms required to provide for effective service delivery, resulting to improved financial performance.

### **5.4.2 Recommendation to Insurers**

It is recommended from the study that the insurance company should enhance their human capital particularly through education and training which result to efficiencies in work resulting to increased financial performance. Through improving knowledge, skills and competences in their workforce insurance companies will be able to increase their financial performance. Also, the firms can 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, the insurance firms need to ensure that their human resource have a better understanding of the firms emerging and core business issues so as to be ahead of the competition.

Networking and trust among the employees as well as the suppliers and customers is the key aspect within the insurance firms. Insurance companies should provide a network relationship with its suppliers and customers. This network relationship enhances trust and as a result insurance companies will be able to understand the need of the suppliers and through meeting those needs then they will be able to increase their financial performance. It is also recommended that organizations should communicate with stakeholders (especially the leading customers) frequently in order to perceive environmental and market changes timely and improve organizational adaptability and flexibility.

In addition, insurance firms should scan and improve itself internally, for example, design efficient management processes, formulate sound management systems, or develop effective information technology platforms, in order to save on organizational costs and improve operational efficiency. The development of organizational capital in insurance firms will support increased financial performance through reduced cost and improved operational efficiency.

The study also recommends that management of insurance firms should empower their employees through innovation strategies that can make them become more innovative. Increased innovativeness in insurance firms result to human capital increasing financial performance. Therefore, the focus of insurance firms needs to be on developing new products and processes, extending the number of product lines as well as making old products more functional. When insurance firms become more innovative, human capital increases financial performance of the organization.

It is also recommended that Insurance firms should increase their innovativeness, since this ensures that social capital results in improved financial performance of the firms, there is need for management of insurance firms to enhance number of the product lines as well as introduce new services based on the customer needs. Through launching customized products, employees will be able to share information and ideas with suppliers and customers leading to superior financial performance. Besides, through new service provision the insurance firms can facilitate knowledge sharing within and outside the firm which enhance financial performance.

With respect to organizational capital, there is need for managers of insurance firm to upscale their innovation in order to cause organization capital to improve on their financial performance. Insurance firms need to update their database promptly on the new products and processes to enable utilization of organizational capital to spur financial performance. Updating their data bases promptly will ensure that their newly introduced products and services can reach the market in a more secured way and does not get lost or misplaced in the process. Because of this improved way of communication to the market information reaches market more efficiently resulting to improved financial performance.

In addition, the insurance firms need to encourage free talks and discussions between colleagues together with ensuring that the systems and procedures in place are flexible and efficient.

### **5.5 Recommendation for Further Studies**

This study only focused on the mediating effect of innovation on intellectual capital and financial performance of insurance firms. A related future research should explore how

different dimensions of innovation mediate different dimensions of intellectual capital and financial performance. Consequently we will be able to find out which specific dimension of firm innovation would play a more effective mediating role in the relationship between different dimensions of intellectual capital and financial performance.

Future studies should investigate the moderating role of firm innovation in the relationship between intellectual capital and financial performance in order to answer the question on what interactive conditions can firm innovation be more effective and efficient in enhancing financial performance.

Finally, further studies are needed to investigate the mediating effects of innovation on the relationship between intellectual capital and financial performance of other firms in other industries apart from insurance companies. This would help to further test the robustness of the current theoretical prediction because organization culture and other differences in other institutions can affect the applicability approach (Koka and Prescott, 2002) in different organizations.

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## APPENDICES

### Appendix I: Questionnaire

**Dear Participant,**

I am a Student of Moi University pursuing Doctor of Philosophy in Business Management conducting research to assess the extent to which financial innovation has affected the relationship between intellectual capital and financial performance of insurance firms in Kenya. This research is a requirement in partial fulfillment for the award of **Doctor of Philosophy** in Business Management of **MOI UNIVERSITY-KENYA**.

You are therefore, requested to participate in this study by filling in the questionnaire which will take you less than 20 minutes. Your participation in this research study is very much appreciated. It is my hope that the timely completion and return of this questionnaire is representative of your continued support for this type of research. All information you provide will be strictly confidential.

Again, thank you for your participation

## SECTION BINTELLECTUAL CAPITAL

### GUIDELINES:

The table below shows alternative responses on intellectual capital; evaluate each statement and tick in the appropriate box based on the level of agreement. 1. strongly disagree 2. disagree 3. somewhat disagree 4. I am not sure 5. Somewhat agree. 6. Agree 7. Strongly agree

### HUMAN CAPITAL

		1	2	3	4	5	6	7
HC1	Our employees are highly skilled							
HC2	Our employees are considered the best in our industry							
HC3	Our employees are creative and bright							
HC4	Our employees develop new ideas and knowledge							
HC5	Our employees are experts in their particular jobs and functions							
HC6	This company's employees are appropriately rewarded							

### SOCIAL CAPITAL

		1	2	3	4	5	6	7
SC1	Our employees share information and ideas with colleagues for better performance							
SC2	Our company is characterized by personal friendship among employees							
SC3	Knowledge sharing among employees is considered normal in our company							
SC4	Employees in our company are enthusiastic about pursuing collective goals							
SC5	The company provides necessary support and resources to enable employees share ideas and knowledge							
SC6	Our company supports and encourages employees to share knowledge with persons outside the organization							

### ORGANIZATIONAL CAPITAL

		1	2	3	4	5	6	7
OC1	Knowledge artefacts (data, documents etc.) are stored and indexed in data bases in our organization							
OC2	Our company culture contains valuable ideas and ways of doing business .							
OC3	Our company's database is updated promptly whenever new information or data is created							
OC4	Our company encourages free talks and discussions between colleagues							

OC5	The systems and procedures in our organization is flexible and efficient							
OC6	Our organization embeds much of its knowledge and information in structures systems and processes							

### SECTION C FIRM INNOVATION

How would you rate the level of achievement of the following innovative performance items in your organization in the last three years compared to the previous years? (1= very unsuccessful 2= unsuccessful 3= somewhat unsuccessful 4= neither successful nor unsuccessful 5= somewhat successful 6= successful 7= very successful)

		1	2	3	4	5	6	7
IP1	Our company is usually the first to introduce new products and services in the market							
IP2	Our company extends number of product lines							
IP3	Our company improve old products and make it functional							
IP4	Our company launches customized products according to market demand							
IP5	Our company's new product/ service introduction has increased in the last years.							
IP6	Our company's innovation achievement is high.							

### SECTION C FINANCIAL PERFORMANCE

How would you rate the level of achievement of the following financial performance items in your organization in the last three years compared to the previous years? (1=very low 2=low 3= somewhat low 4= neither high nor low 5= somewhat high 6= high 7= very high)

		1	2	3	4	5	6	7
FP 1	Our organization has had growth on net profit earnings from the business over the past five years							
FP 2	Our company has recorded improved Return on Investment (ROI) over the last five years							
FP 3	Our company has registered growth in turnover / sales from the business over the past five years							
FP 4	Our company's profits have been higher compared to assets and liabilities							
FP5	Our organizations' shares outstanding are greater than the net income							
FP 6	Our organization has registered growth in turnover compared to the competitors over the past five years							

**Thank you once again for your cooperation**

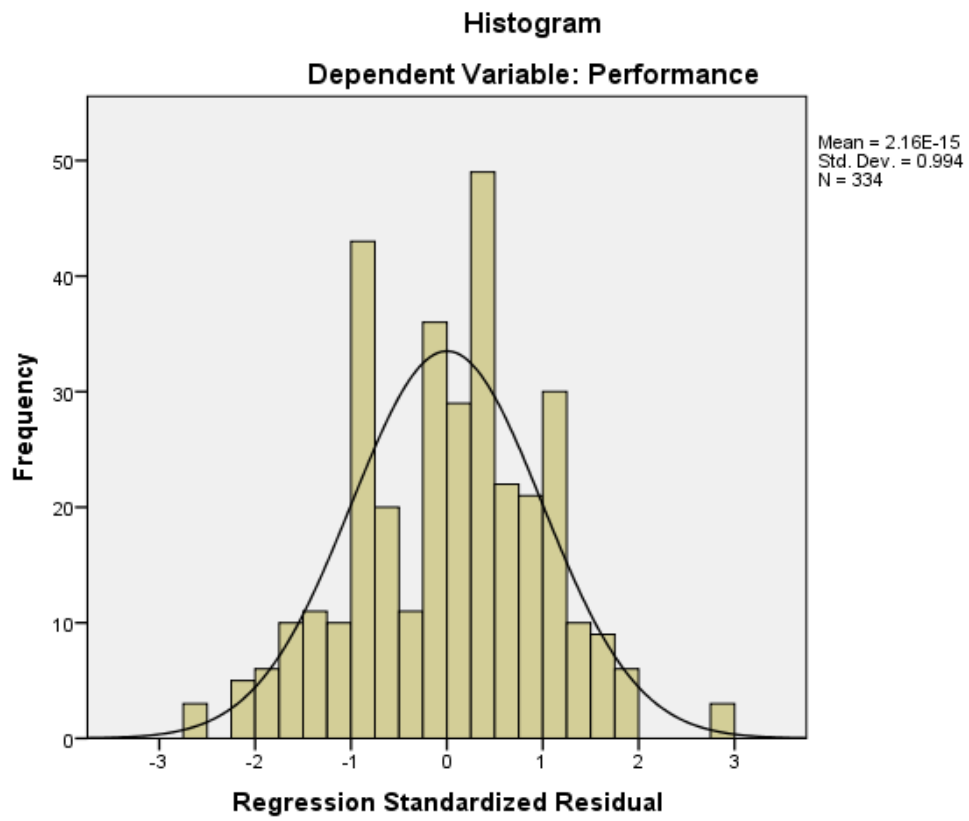
## Appendix II: List of Insurance Firms and Number of Employees

	INSURANCE FIRMS
1	AAR Insurance Kenya Limited
2	APA Insurance Limited
3	Africa Merchant Assurance Company Limited
4	Apollo Life Assurance Limited
5	AIG Kenya Insurance Company Limited
6	British-American Insurance Company (Kenya) Limited
7	Cannon Assurance Limited
8	Capex Life Assurance Company Limited
9	CFC Life Assurance Limited
10	CIC General Insurance Limited
11	CIC Life Assurance Limited
12	Continental Reinsurance Limited
13	Corporate Insurance Company Limited
14	Directline Assurance Company Limited
15	East Africa Reinsurance Company Limited
16	Fidelity Shield Insurance Company Limited
17	First Assurance Company Limited
18	G A Insurance Limited,
19	Gateway Insurance Company Limited
20	Gemina Insurance Company Limited
21	ICEA LION General Insurance Company Limited
22	ICEA LION Life Assurance Company Limited
23	Intra Africa Assurance Company Limited
24	Invesco Assurance Company Limited
25	Kenindia Assurance Company Limited
26	Kenya Orient Insurance Limited
27	Kenya Reinsurance Corporation Limited
28	Madison Insurance Company Kenya Limited
29	Mayfair Insurance Company Limited
30	Mercantile Insurance Company Limited
31	Metropolitan Life Insurance Kenya Limited
32	Occidental Insurance Company Limited
33	Old Mutual Life Assurance Company Limited
34	Pacis Insurance Company Limited
35	Pan Africa Life Assurance Limited
36	Phoenix of East Africa Assurance Company Limited
37	Pioneer Assurance Company Limited

38	Real Insurance Company Limited
39	Resolution Insurance Company Limited
40	Shield Assurance Company Limited
41	Takaful Insurance of Africa Limited
42	Tausi Assurance Company Limited
43	The Heritage Insurance Company Limited
44	The Jubilee Insurance Company of Kenya Limited
45	The Monarch Insurance Company Limited
46	Trident Insurance Company Limited
47	UAP Insurance Company Limited

**Source: (IRA, 2017)**

### Appendix III: Graphical Plots



**Figure 4.2 Histogram with normal distribution**



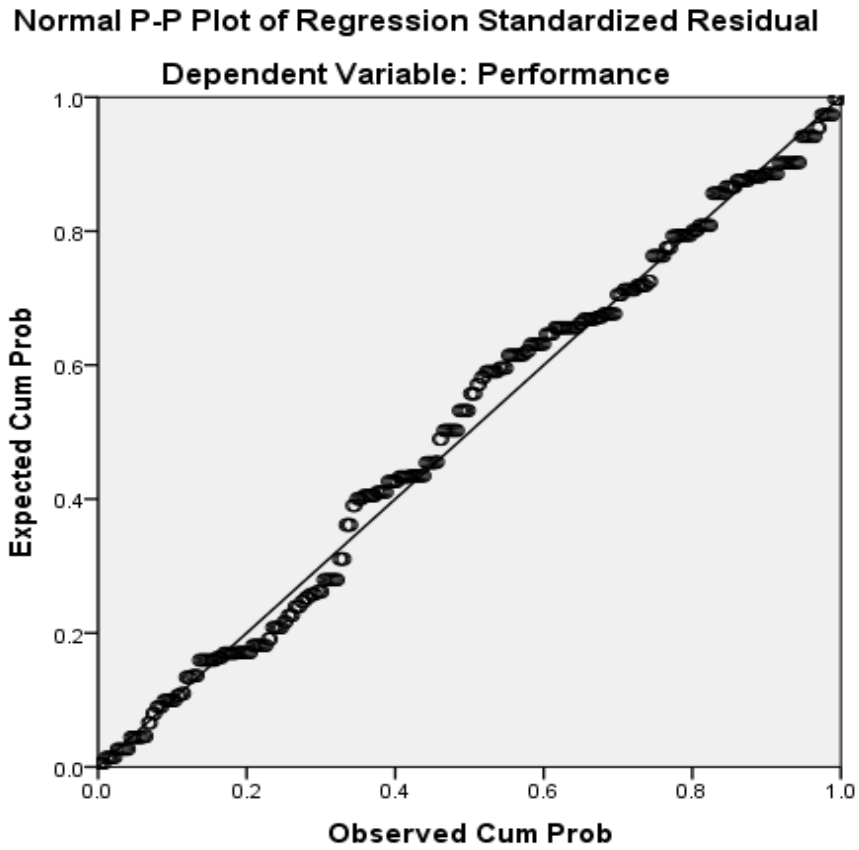
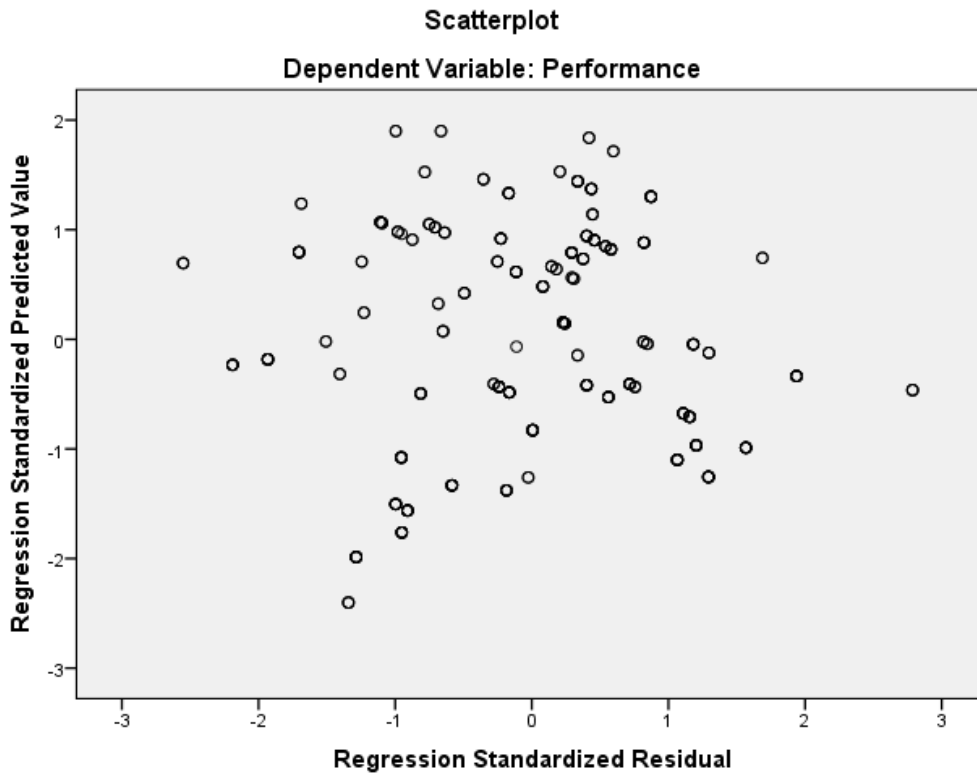
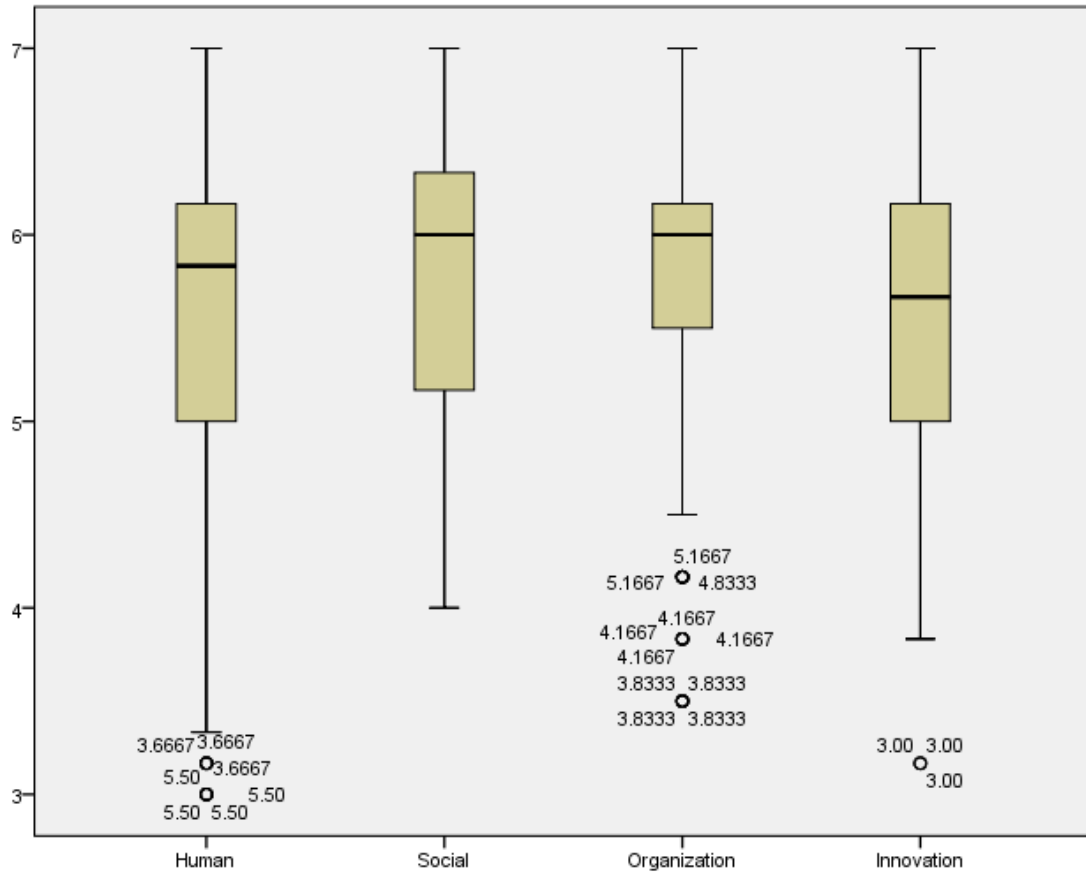


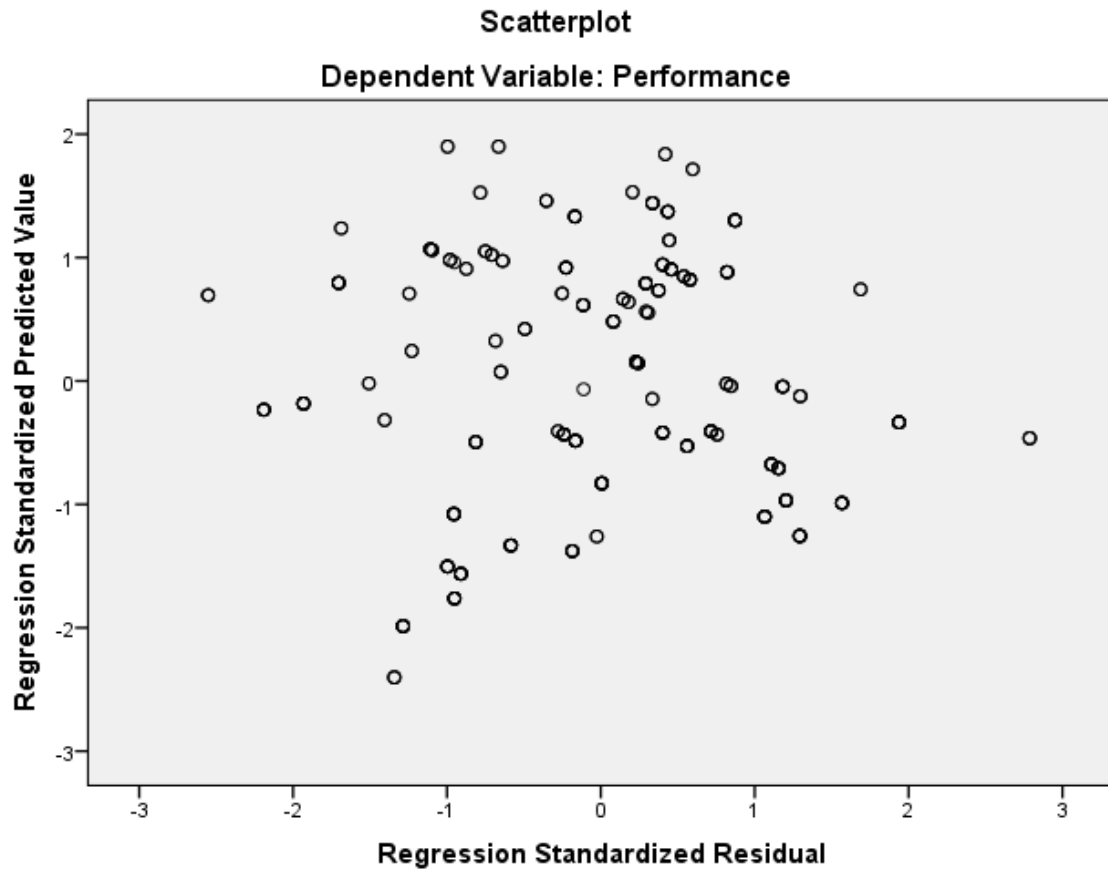
Figure 4.3 Normal P plots



**Figure 4.4** Scatterplots showing linear and curvilinear relationships with standardized residuals by predicted values.



**Figure 4.5** Boxplot with variables at similar levels



**Appendix IV: Research Permit**

**THIS IS TO CERTIFY THAT:  
MS. TECLA CECILIA KIRWA  
of MOI UNIVERSITY, 1699-50200  
BUNGOMA,has been permitted to  
conduct research in *All Counties***

**Permit No : NACOSTI/P/17/55936/19730  
Date Of Issue : 30th October,2017  
Fee Received :Ksh 2000**

**on the topic: *EFFECT OF FIRM  
INNOVATION ON THE RELATIONSHIP  
BETWEEN INTELLECTUAL CAPITAL AND  
FINANCIAL PERFORMANCE OF  
INSURANCE COMPANIES IN KENYA***

**for the period ending:  
30th October,2018**



.....  
**Applicant's  
Signature**

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

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Technology and Innovation**

**RESEARCH CLEARANCE  
PERMIT**

**Serial No.A 16230**

**CONDITIONS: see back page**