

**THE INFLUENCE OF FIRM INTERNAL ENVIRONMENT ON THE INNOVATIVE  
CAPACITY OF COMMERCIAL BANKS IN KENYA**

**BY**

**MAKWATA JULLIE**

**10/00992**

**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE  
REQUIREMENTS FOR THE AWARD OF DEGREE OF MASTER OF KNOWLEDGE  
MANAGEMENT AND INNOVATION IN THE SCHOOL OF BUSINESS AND PUBLIC  
MANAGEMENT, KCA UNIVERSITY, KENYA**

**NOVEMBER 2019**

## DECLARATION

I declare that this dissertation is my original work and has not been previously submitted or published elsewhere for award of degree. I also declare that this contains no material by other people except where due reference is made, and author duly acknowledged.

Sign  \_\_\_\_\_ Date 1st November 2019

Makwata Jullie

10/00992

I do hereby confirm that I have examined the master's dissertation of Jullie M Makwata and have approved it for examination.

Sign \_\_\_\_\_ Date \_\_\_\_\_

Dr. Alfred Nzomo Kithusi

Dissertation supervisor

KCA University

## **DEDICATION**

I dedicate this dissertation to my late parents John and Elizabeth, my spouse Wycliffe, our children Lloyd, Leo and Lyn and my siblings.

## **ABSTRACT**

The banking sector has of late been considered as one of the least competitive sectors in the economy of Kenya considering the number of commercial banks in operation against the market size. Introduction of new capital adequacy ratio by the CBK to be observed by commercial banks brought about several mergers and acquisitions. To add on to this, the introduction of the interest rate capping laws by the government in September 2016 saw a reduction of revenue sources by banks since they were required to cover the cost of operation through thin margins. Commercial banks have to devise innovative ways to meet the ever-changing user needs by investing improving their innovative capacity in order to beat competition and stay relevant in the market. The study examined how variables in the firm internal environment comprising of firm networks, human capital and absorptive capacity influenced the innovative capacity of commercial banks in Kenya. The theories that informed the study included Social capital theory, Social Network theory, the Knowledge based view theory of the firm and the open innovation paradigm theory. The study adopted a descriptive research design to understand the happenings regarding innovation in the banking industry in Kenya. The census sampling method was applied since the target population of 43 was not huge and the target banks are all headquartered in Nairobi. The study used primary data collected by use of a structured questionnaire. Data was analysed using regression method and yielded descriptive statistics including frequency, percentage, mean and standard deviation. Hypotheses were tested using ANOVA. The study established that whereas both Firm networks, Human Capital and Firm absorptive capacity had a great influence on the innovative capacity of commercial banks in Kenya, knowledge creation and sharing through collaborative networks was the key driver of innovation in commercial banks. The study concluded that Firm Networks, Human capital and Firm absorptive capacity had a great influence on bank innovation since they both facilitated acquisition and sharing of new knowledge which is the most vital resource in the innovation of new products, services, processes and procedures. The study concluded that banks needed to intensify collaboration through networks, motivate their workforce through creation of a knowledge culture and putting in place effective reward and recognition systems and finally development and implementation of knowledge management systems to facilitate knowledge creation, processing, sharing, application and storage for use by future generations.

## **ACKNOWLEDGEMENT**

I appreciate the almighty God for giving me an opportunity to pursue my post-graduate studies in knowledge management and innovation at KCA University. I acknowledge the guidance and help I have received from my thesis Supervisor Dr Alfred Nzomo Kithusi. Special thanks to my Family, colleagues at KIPPRA and my classmates, especially the MSC KMI cohort of January 2018.

God bless you.

## TABLE OF CONTENTS

|                                                                       |             |
|-----------------------------------------------------------------------|-------------|
| <b>DECLARATION.....</b>                                               | <b>ii</b>   |
| <b>DEDICATION.....</b>                                                | <b>iii</b>  |
| <b>ABSTRACT.....</b>                                                  | <b>iv</b>   |
| <b>ACKNOWLEDGEMENT.....</b>                                           | <b>v</b>    |
| <b>LIST OF TABLES.....</b>                                            | <b>viii</b> |
| <b>LIST OF FIGURES.....</b>                                           | <b>ix</b>   |
| <b>ACRONYMS AND ABBREVIATIONS.....</b>                                | <b>x</b>    |
| <b>OPERATIONAL DEFINITION OF TERM.....</b>                            | <b>xi</b>   |
| <b>CHAPTER ONE.....</b>                                               | <b>1</b>    |
| <b>INTRODUCTION.....</b>                                              | <b>1</b>    |
| 1.1 Background of the Study.....                                      | 1           |
| 1.2. Statement of the Problem.....                                    | 4           |
| 1.3. Objectives of the Study.....                                     | 6           |
| 1.4 Research Questions.....                                           | 6           |
| 1.5 Justification of the Study.....                                   | 7           |
| 1.6 Scope of the Study.....                                           | 7           |
| <b>CHAPTER TWO.....</b>                                               | <b>8</b>    |
| <b>LITERATURE REVIEW.....</b>                                         | <b>8</b>    |
| 2.0. Introduction.....                                                | 8           |
| 2.1. Theoretical Review.....                                          | 8           |
| 2.2 Empirical Review of Literature and Summary of Knowledge Gaps..... | 13          |
| 2.3. Summary of literature review and Knowledge Gaps.....             | 21          |
| 2.4. Conceptual Framework.....                                        | 29          |
| 2.5 Operationalization of Study Variables.....                        | 30          |
| 2.6 Study Hypothesis.....                                             | 32          |
| <b>CHAPTER THREE.....</b>                                             | <b>33</b>   |
| <b>RESEARCH METHODOLOGY.....</b>                                      | <b>33</b>   |
| 3.0. Introduction.....                                                | 33          |
| 3.1. Research Design.....                                             | 33          |
| 3.2 Target Population.....                                            | 34          |
| 3.3. Sample Size and Sampling Procedure.....                          | 35          |

|                                                         |           |
|---------------------------------------------------------|-----------|
| 3.4. Research Instruments .....                         | 35        |
| 3.5. Reliability and Validity of the Instrument.....    | 36        |
| 3.6 Data Collection Procedures .....                    | 38        |
| 3.7 Data Processing and Analysis .....                  | 38        |
| 3.8. Diagnostic Tests .....                             | 40        |
| 3.9. Ethical Issues.....                                | 40        |
| <b>CHAPTER FOUR.....</b>                                | <b>41</b> |
| <b>DATA ANALYSIS, FINDINGS AND DISCUSSIONS .....</b>    | <b>41</b> |
| 4.0 Introduction .....                                  | 41        |
| 4.1 Response Rate .....                                 | 41        |
| 4.2 Reliability Test .....                              | 41        |
| 4.3 General Information .....                           | 42        |
| 4.4 Diagnostic Tests .....                              | 45        |
| 4.5 Descriptive Analysis of Variables .....             | 50        |
| 4.6. Regression Analysis .....                          | 54        |
| <b>CHAPTER FIVE .....</b>                               | <b>65</b> |
| <b>SUMMARY, CONCLUSION AND RECOMMENDATIONS .....</b>    | <b>65</b> |
| 5.1. Introduction .....                                 | 65        |
| 5.2. Summary of Findings .....                          | 65        |
| 5.3. Conclusion .....                                   | 68        |
| 5.4 Recommendations .....                               | 69        |
| 5.5. Implications of the Study .....                    | 71        |
| 5.6 Suggestion for Further Studies .....                | 72        |
| <b>REFERENCES.....</b>                                  | <b>73</b> |
| <b>APPENDICES.....</b>                                  | <b>81</b> |
| Appendix I: Letter to Respondents.....                  | 81        |
| Appendix II: University Introduction Letter .....       | 82        |
| Appendix III: Questionnaire.....                        | 83        |
| Appendix IV: List of all Commercial Banks in Kenya..... | 88        |

## LIST OF TABLES

|                                                                           |    |
|---------------------------------------------------------------------------|----|
| Table 2.1: Summary of Previous Empirical Studies and Knowledge Gaps ..... | 24 |
| Table 2.2: Operational Framework .....                                    | 31 |
| Table 4.1: Response Rate.....                                             | 41 |
| Table 4.2: Reliability Test.....                                          | 42 |
| Table 4.3: Coefficient .....                                              | 49 |
| Table 4.4: Firm Networks .....                                            | 51 |
| Table 4.5: Human Capital .....                                            | 52 |
| Table 4.6: Firm Absorptive Capacity.....                                  | 53 |
| Table 4.7: Innovative Capacity of Commercial Banks.....                   | 54 |
| Table 4.8: Model Summary .....                                            | 55 |
| Table 4.9: ANOVA.....                                                     | 56 |
| Table 4.10: Regression Coefficients .....                                 | 57 |
| Table 4.11: Model Summary .....                                           | 58 |
| Table 4.12: ANOVA.....                                                    | 58 |
| Table 4.13: Regression Coefficients .....                                 | 59 |
| Table 4.14: Model Summary .....                                           | 60 |
| Table 4.15: ANOVA.....                                                    | 60 |
| Table 4.16: Regression Coefficients .....                                 | 61 |
| Table 4.17: Model Summary .....                                           | 62 |
| Table 4.18: ANOVA.....                                                    | 63 |
| Table 4.19: Regression Coefficient.....                                   | 63 |

## LIST OF FIGURES

|                                                             |    |
|-------------------------------------------------------------|----|
| Figure 2.1: Conceptual Framework Model .....                | 30 |
| Figure 4.1: Gender of respondents.....                      | 42 |
| Figure 4.2: Age of Respondents.....                         | 43 |
| Figure 4.3: Level of Education for Respondents .....        | 44 |
| Figure 4.4: Length of Service in the Banking Industry ..... | 45 |
| Figure 4.5: Normality Test.....                             | 46 |
| Figure 4.6: Heteroscedasticity Test.....                    | 47 |

## **ACRONYMS AND ABBREVIATIONS**

|                |                                         |
|----------------|-----------------------------------------|
| <b>ANOVA</b>   | Analysis of Variance                    |
| <b>ATM</b>     | Automated Teller Machine                |
| <b>CBK</b>     | Central Bank of Kenya                   |
| <b>IP</b>      | Intellectual Property                   |
| <b>KM</b>      | Knowledge management                    |
| <b>R&amp;D</b> | Research and Development                |
| <b>SME</b>     | Small and Medium-Sized Enterprises      |
| <b>SPSS</b>    | Statistical Package for Social Sciences |

## OPERATIONAL DEFINITION OF TERM

**Absorptive capacity** is the ability of a firm to seek new knowledge from external sources, assimilate the same and apply it towards improvement of its products and services while developing new ones to gain competitive advantage over competitors (Baskarada & Koronios, 2018).

**Combinative ability** is defined as the combined efforts of employees or firms to utilize the available resources to achieve improved results with the main aim of achieving efficiency and competency (BarNir & Smith, 2002).

**Firm internal environment** refers to the macro conditions within the firm which create a conducive environment that motivates employees to work tirelessly through sharing information in achieving efficiency and competency (Awais Ahmad Tipu, 2014).

**Firm networks** are special arrangements where two or more independent organizations team up to perform business activities together through creation and sharing and application of new knowledge towards the innovation of new products, services and procedures (Chuluun, Prevost, & Upadhyay, 2017).

**Innovative capacity** is defined as the ability of a firm to utilize the available resources while making effort to seek resources not within their reach through internal and external networks with other firms of interest with the main aim of seeking to improve already existing products and services and innovating new ones so as to gain a competitive edge and stay relevant in the turbulent business environment (Cropley & Cropley, 2017).

**Knowledge Management** are the process of seeking, acquiring, processing, storing and applying knowledge towards the improvement of business through improved or new products, services,

processes of procedures for the sole purpose of gaining a competitive edge in the turbulent business environment (Nirmala & Vemuri, 2009).

**Non- redundant knowledge** refers to knowledge which has not been utilized in any meaningful way to give value to an individual or a firm. It may be in the form of tacit (in the mind) or explicit (codified) (Swan, Newell, Scarbrough, & Hislop, 1999).

**Organization/firm** is an entity which is formed by an individual, a group of people or companies with a vision and mission of doing business to gain profit through offering improved or new products, services, processes, processes and business models (Shuman & Twombly, 2010).

## **CHAPTER ONE**

### **INTRODUCTION**

This chapter lays the background of the study as it presents the basis of the study and explains its fundamental evidence and platform. It sets the motivation to the study as well as the extent of the study. This consists of the background of the study, the problem statement, study objectives and research questions, the justification of the study as well as the scope of the study.

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

The banking industry, which is a subset of the financial sector is considered as one of the most strategic sectors that cannot be overlooked in the economy of any developing or developed country for it plays a vital role in the financial intermediation process. Literature provides supporting evidence that this sector is a great determinant of the economic growth by contenting to the fact that its development promotes entrepreneurship and intensifies competition between firms, thus boosting productivity and increasing efficiency among firms (Aluko & Ajayi, 2018). Efficiency in the banking sector is vital since it is the driving engine of the economic growth through the allocation of required resources to productive units while promoting access to financial services as an integral component in the financial system of a country. Over the years, the sector has faced intensified competition, changes in the financial markets, ever changing client needs and a great shift and adjustments in bank products, services, processes, procedures and business models (CBK, 2017).

The onset of technology use in the sector to streamline operations has triggered banks to seek new ways of surviving the turbulent business environment by beating competition and gaining a competitive edge in the market. Technologies such as internet and mobile banking, agent banking,

use of visa cards, ATM's and smart phone applications have revolutionized the sector by triggering intensified competition thus banks are striving to become more innovative to stay relevant in the market (Kasevu, 2011).

In Pakistan, vast application of information technology, recruitment of a skilled workforce, collaboration through strong network ties and acquisition of new knowledge for innovation have become the most common initiatives that differentiate banks from their competitors in the market. Adoption of innovation strategies in the United Kingdom banking sector has helped bring about sustainable competitive advantage through the ability of banks to seek new knowledge, adopt ideas, innovate and implement new products and services (Tahir, Shah, & Afridi, 2016). In France, most banking institutions have found it wise to invest in innovation to develop new business models in order to beat market competition and deal with financial crisis caused by the French revolution. R&D and retail banking are some of the strategies employed by banks to increase efficiency (de Rozario, 2016)

In Africa, the banking sector has contributed mostly towards poverty alleviation, reduction in household and firm financial constraints, intensified competition among firms and increased economic growth (Aluko & Ajayi, 2018). Kenya being among the African countries has not been left out since its banking sector has grown from a regulatory and strategic perspective through the development of value networks to survive the turbulent competitive environment while constantly innovating new products, services, processes and business models (Njogu, 2016). Kenya has one of the most stable and innovative banking sectors in Africa thus being envisaged as the hub of financial services and the most diverse banking industry in East Africa with forty-three (43) commercial banks, one (1) licensed mortgage financial institution, eight (8) authorized non-

operating bank holding companies, and nine (9) microfinance Commercial banks. Dominant players include some of the indigenous Commercial banks such as Equity Bank, Kenya Commercial Bank and Cooperative Bank; and foreign owned Commercial banks such as Barclays Bank of Kenya, Standard Chartered bank among others (CBK, 2017).

In Kenya, according to Misati and Kamau (2015) advanced technology facilitates banks to process data and information fast and efficiently thus leading to a cashless society with vast growth of plastic money. Despite investing heavily in technology, rigid structures brought about by high interest rate spread remain a major impediment in the growth of the banking sector. They further argue that the sector is still segmented and constrained with very few credit lines with large banks lending and borrowing from each other while the small ones have limited access to credit due to perceived risk of non-existence of credit lines. To overcome this, Karanja (2013) states that banking institutions in Kenya get imbedded in collaborative networks since they offer market diversity, competitive pricing and shorter product life cycles. They are required to expound on their existing knowledge base by seeking new knowledge from partners to create the capabilities required to develop new products, services, processes and procedures since knowledge is the most strategic resource in facilitating innovation.

The ever-changing needs of the consumers globally requires firms in whichever industry they belong to become more innovative in terms of products services and business models to survive competition and gain a competitive edge (Kasevu, 2011). Therefore, commercial banks need to embrace innovation due to the ever increasing competitive and highly volatile banking sector which is a result of the pressure of ever rapidly changing client needs and desires which tasks them

with the responsibility of maximizing profitability and shareholders wealth. This can only be achieved through high notch innovation (YuSheng & Ibrahim, 2019).

## **1.2. Statement of the Problem**

Innovation is a great determinant of efficiency and effectiveness in firms. Unless a firm invests heavily innovation of new products and services, surviving in the turbulent business environment will be impossible due to the high competition especially in the service industry. Lack of creativity and innovation is one of the major problems facing the banking sector in Kenya, which is evidenced in a study carried out by Louw, Muriithi & Radloff (2017) who observed that the country has undergone several years of financial crisis which saw more than 20 banks put under receivership. This was caused by poor leadership attributed ineffective leadership.

The banking sector has of late been considered as one of the least competitive sectors in the economy of Kenya considering the number of commercial banks in operation against the market size. Introduction of new capital adequacy ratio by the CBK to be observed by commercial banks for a healthy banking industry brought about several mergers and acquisitions. To add on this, the introduction of the interest rate capping laws by the government in September 2016 saw a reduction of revenue sources by banks since they were required to manage the cost of operation on their own. Banks were therefore required to device innovative ways to meet the ever-changing user needs by investing in R&D to beat competition and stay relevant in the market (CBK, 2017)

Despite the country having a vibrant banking sector in the east African region, there are several barriers which have adversely affected the growth of commercial banks including access to financial services, poor networks, poor KM, lack of access to credit and underdeveloped technologies (Ng'ang'a, 2008). Kenyan commercial banks performance has been growing

positively though at a very slow or rather reducing pace. The industry has been offering consumers similar products over a long period of time with little difference in the packaging, which has lowered the competitiveness of banks since they are unable to offer unique products and services. Strong competition, financial service markets, advances technology, the size of financial institutions, economic conditions, new legislation and increases financial supervision has influenced innovation in the banking industry. It is therefore necessary for commercial banks to seek new ways of innovating unique products and services so as to survive competition in the turbulent environment.

Big players in the Kenyan banking industry have faced various challenges which forces them to reinvent the wheel. Over the years, for example, Barclays bank of Kenya has failed to adopt competitive innovative strategies which has led to reduced market share and reduction in the number of customers since most of them leave in search of new products and services which suit their needs. The bank customer care service, processes and turnaround time have been rated poor in customer satisfactory surveys in the recent years. Standard chartered bank has been facing stiff competition from its competitors in the market but has been striving to survive through launching campaigns to create awareness of their products and services while United Bank of Africa strive to beat competition by investing in innovative strategies that enhance its success and survival Kasevu, (2011)

Studies by different scholars and institutions such as Nganga, (2008); Louw, Muriithi and Radloff, (2017); Kasevu, (2011); CBK, (2017); and Kenya Bankers Association, (2017) indicate that for a bank to increase its innovative capabilities and stay competitive in the market, it has to play smart

by investing in key strategies. They identified these strategies as firm networks, high absorptive capacity and competent human capital.

This informs the research gaps which gave rise to the researcher's interest in conducting further research on the area of bank innovation. It then informed the theoretical framework of the study, the study objectives, hypothesis and the conceptual framework.

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

#### **1.3.1 General Objective**

The main objective of this study was to establish the influence of firm internal environment on the innovative capacity of commercial banks in Kenya.

#### **1.3.2 Specific Objectives**

The general objective was broken down into the following specific objectives:

1. To establish the influence of firm networks on the innovative capacity of Commercial banks in Kenya.
2. To establish the influence of human capital on the innovative capacity of Commercial banks in Kenya.
3. To establish the influence of firm absorptive capacity on the innovative capacity of Commercial banks in Kenya.

### **1.4 Research Questions**

The following are the research question for the study:

1. What is the influence of firm networks on the innovative capacity of Commercial banks in Kenya?

2. What is the influence of human capital on the innovative capacity of bank in Kenya?
3. What is the influence of firm absorptive capacity on the innovative capacity of Commercial banks in Kenya?

### **1.5 Justification of the Study**

The study findings and recommendations will be beneficial to various stakeholders. The study will be beneficial to commercial banks in Kenya since it will help them to understand the importance of investing heavily in innovation of new products and services through strategies such as firm networking, development of high absorptive capacity and a competent workforce to gain a competitive edge in the market. Government and policy makers will benefit from the study findings and recommendations. They will find useful information that is vital in improving the regulations and operations of commercial banks in Kenya. To research and academicians, the study findings and recommendations will open a window for further research in the area of innovation in the banking industry it will provide reference materials and highlight areas that researcher can focus on when carrying out further research. This will also help to build on existing research on the area of bank innovation.

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

The study focused on assessing the influence of firm internal environment on the innovative capacity of Commercial banks in Kenya. It was carried out in Kenya, specifically in Nairobi where all the 43 commercial banks are headquartered.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0. Introduction**

This chapter provides a review of related literature with regards to variables influencing the innovative capacity of Commercial banks in Kenya. It contains a review of literature by various scholars which is beneficial to the study indicating findings, recommendations and research gaps to be filled. It reviews theories and empirical studies that explain the effect of firm internal environment which comprises of firm networks, human capital, absorptive capacity and the firm internal environment on the innovative capacity of Commercial banks in Kenya. The chapter concludes with a conceptual framework for the study and the operationalization of the study variables.

#### **2.1. Theoretical Review**

This study considered certain theories useful in explaining the relationship between variables influencing the innovative capacity of commercial banks in Kenya. It reviewed various theories and literature which are useful to the study. The theories include Social Capital Theory, Social Network Theory, Knowledge Based View theory of the firm and the Open Innovation Paradigm Theory. The theories are vital because they guided in the design and development of a conceptual framework for the study.

##### **2.1.1 Social Capital Theory**

Social Capital Theory is a theory premised on the benefits which individuals in an organization accrue from social interactions such as social networking, bonding between people with close relationships or bridging of gaps between people of diverse communities (Bhatt & Altinay, 2013). The theory has 3 dimensions: structural dimension which relates to whether network ties are

present, relational dimension which relates to the interpersonal relationships established between firms and the cognitive dimension which relates to representations and interpretation among the firms embedded within the network (Diez-Vial & Montoro-Sánchez, 2014). Through interaction with colleagues, other firms and partners, firms gain an understanding of industry benchmarks and competitive trends and acquire new knowledge that can be leveraged for innovation thus leading to competitive advantage. (Mu, Peng, & Love, 2008).

Social capital theory enhances knowledge management practices of knowledge capture, codification and transfer by contributing to a firm's ability to create value through innovation by combining and exchanging resources within and between firms. Additionally, it increases efficiency in action and enhances cooperation between persons, serves as a vital element in human capital development and provides access to pools of resources through networking thus increasing the firm's AC (Hoffman, Hoelscher, & Sherif, 2005). Under the Social capital theory, since there exists many tangible and intangible barriers which separate the activities of value creation between different firms Mu, Peng, & Love, (2008), Alguezaui & Filieri, (2010) opine that firms which are embedded in collaborative networks are more likely to realize high levels of innovative performance since they benefit from reduced transaction costs, notably search and information costs, bargaining and decision costs, policing and enforcement costs among others.

The significance of this theory to the study was that it informed of the importance of interaction within and between firms and the formation of strong network ties to facilitate innovation. It helped in sensitizing on the importance of equal participation of all firms embedded in a network and the benefits which accrue from combining resources to facilitate innovation.

### **2.1.2. Social Network Theory**

The Social Network Theory studies how people choose on each other for different tasks and in different situations. It suggests that patterns and meanings of relationships demonstrates different behavior of people from dynamic backgrounds interact to exchange knowledge. It provides methodological tools and a theoretical framework which helps to understand social structures by analyzing social relationship patterns thus facilitating the formation of firm networks both internal and external (Schultz-Jones, 2009).

The theory studies social structures and has been widely used to issues related to knowledge management in organizations. It involves mapping and measuring relationships and flow of knowledge between people, teams, firms, computer systems among other knowledge processing entities. A person who applies Social network analysis theory is mostly interested in how individuals are networked within structures and the formation of these structures form the micro-relations between individuals. It is through these relationships that individuals within and between forms exchange knowledge thus increasing a firm's AC. (Bracke, 2016).

Awazu (2004) stresses that the most important aspect in social network theory is the ability to measure the strength of ties between actors. He further outlines the various actors within Social Network Theory and the roles they play to facilitate knowledge creation and sharing within the organization to enhance its innovative capacity. They include the central connectors, the boundary spanners, the gate keepers and the bridges.

The significance of this theory to the study was that it highlighted how people in a firm benefit from interacting with one another and helped top management in recognizing and appreciating relationships created between employees within and between firms. It also helped to understand

information flow in the firm and how ideas are generated through the social networks that emerge among employees especially the informal networks and how these ideas can be leveraged for innovation. The theory helped to outline the different roles played by various frontline employees in the innovation process.

### **2.1.3. Knowledge Based View Theory of the Firm**

The Knowledge Based View of the firm is a theory which seeks to explain how firms value knowledge as the most important intellectual asset in helping them face competition in the turbulent business environment. It outlines how they put more emphasis on learning, acquiring new knowledge and implementing it as a key factor of productivity in gaining and maintaining a competitive edge over other competitors (Martin-de Castro, Lopez-Saez, & Delgado-Verde, 2011). The theory further explains that the innovative capability of firms depends on its IP, more so the knowledge in its possession thus viewing innovation as the most knowledge intensive business process within the firm (Nonaka and Takeuchi 1995).

The theory emphasizes that the firm is an entity which generates and applies different varieties of new knowledge to enhance performance and puts emphasis on the way through which a firm develops its specific capabilities over time as a key element to achieve high performance and gain a competitive edge (Saarenketo, Puumalainen, Kuivalainen & Kyalahaiko 2009). The theory emphasizes on firms striving to have high absorptive capacity, which is the ability of a firm to go an extra mile to seek new knowledge from external sources, internalize the same and apply it to improve its processes and procedures to improve innovation, increase profits and gain a competitive edge in the market (Baskarada & Koronios, 2018).

The knowledge-based view theory suggests that there should exist relationships between human capital (the skills and experience needed to complete tasks), market information knowledge (gathering and organization of data in a way that facilitates completion of tasks) and customer relationship knowledge (human capital knowledge and market information). Market information knowledge impacts on human capital knowledge, human capital knowledge influences decision making through better choices and information interpretation while customer relationship knowledge requires firms to have strong ties with stakeholders to provide enough knowledge for their staff to continue developing market data (Martin & Javalgi, 2019).

This theory was relevant to the study because it seeks to help firms understand and appreciate the fact that knowledge is the most vital resource in innovation thus, they should put in place systems to facilitate seeking, acquisition, processing, storage and utilization of knowledge that is not within their reach thus develop high AC. It also helped in appreciating people as a vital resource in driving innovation and thus appreciate them by putting in place reward and recognition systems that would motivate them to share their tacit mind thus generate innovative ideas.

#### **2.1.4. Open Innovation Paradigm Theory**

The open innovation paradigm theory not only depicts all instruments of collaborative innovation but also describes a holistic innovation management strategy which explores and exploits a variety of sources of innovation opportunities using multiple channels. Under this theory, there always exists a research gap in almost all organizations when they begin realizing shortcomings in their internal R&D divisions or activities. It then dawns on them that to remain relevant in the market, they require to go out of their way to find new avenues of gaining access to external knowledge

and technologies in the ever-increasing turbulent environment. They therefore change their innovation model from closed to open (Inauen & Schenker-Wicki, 2011).

The open innovation paradigm depicts porous innovation processes and strong interactive ties of firms with the environment in which they operate in. Integration of many individuals in the innovation process enhances creativity and birth of new ideas within the organization. The theory also states that a firm can utilize its dormant IP through selling patents, direct licensing or on intermediate markets. It relies on the assumption that commercialization of external sources of innovation and seeking external ways of commercializing internally sourced innovation increases the profit margins of the firm (Schroll & Mild, 2011).

The significance of this theory to the study was to inform on the need to collaborate with other firms since no firm can survive the turbulent business environment on its own. It helped to enlighten on the importance of knowledge sharing through collaborative networks to help generate innovative ideas and highlight the benefits which accrue from collaborative innovation such as reduction of transaction cost, knowledge dissemination, receiving complementarity and business competent among others.

## **2.2 Empirical Review of Literature and Summary of Knowledge Gaps**

The study reviewed and summarized literature relating to the independent and dependent variable; firm networks, human capital, firm absorptive capacity and the innovative capacity of firms.

### **2.2.1 Firm Networks**

A study carried out by D'Andreta, Marabelli, Newell, Scarbrough, and Swan (2016) revealed that networks are vital in both in the manufacturing and service industry where organizations and

people of the same profession who have varied beliefs, roles and interests are required to work in unison to develop and implement new ideas which improve performance. They state that efforts to improve innovation through the formation of organizational networks have been on the rise but their capacity to produce relevant innovations is not clearly defined since firms do not value networking as a core driver of innovation. They then recommend more research on how the different types of networks influence innovation on firms in reference to network's social structure, how activities in the networks are framed by members and how this influences innovation capacity of networks since this is an area which has been underexplored.

Whelan (2016) discovered in his study on informal social networks between and within organizations that most of the work in firms gets done through employee informal networks yet most firms lack proper defined structures of how information should flow. Therefore, there is need to explore and increase our knowledge on these types of networks between organizations since little is known about the relationship between social and organizational networks, formal and informal networks and interpersonal and interorganizational ties.

In their study, Najafi-Tavani, Naude, Oghazi and Zeynaloo (2018) found out that collaborative networks with stakeholders such as suppliers, customers, competitors and research organizations enable firms to improve new product performance through the development of new products, services and processes. However, relationship between the firm and its stakeholders through networking is missing in the study. Therefore, more comprehensive research will shed more light on how such types of collaboration influence organizational outcome such as number of patents registered by a firm in a given period and the new product introduced in the market and their speed to market them. The scholars further recommend more studies to establish whether the relationship

between collaborative networks and innovative capabilities of a firm are pegged on the network characteristics.

A study carried out by Dagnino, Levanti, Mina and Picone (2015) on interorganizational networks and innovation focused only on the impact of innovation in interfirm networks and overlooked interpersonal, intrafirm and business networks. More research will therefore shed more light by providing information on how the several networks created by firms in different industries, different regions and globally contribute to the development of new innovations. (Ongong'a, 2011) carried out a study on networking in the Kenyan informal sector and discovered that through small entrepreneurial networks, Medium Sized Enterprises (SME's) which keep strong and regular networks with external firms often succeed in business due to access to pools of resources for innovation. He discovered a research gap in understanding entrepreneurial networks in developing countries particularly in Kenya where small business networks have not been studied properly. He also discovered that there is a very weak link between Kenyan firms and the National Innovation System and recommends a critical approach in the analysis of business networks to assess their importance in innovation and business performance.

Ng'ang'a (2008) carried out a study on the determinants of firm networks in Kenya. In his study, he discovered that interfirm networks play a critical role in dissemination of information, facilitating collective action and lowering transaction costs thus enhances business competencies. He further explains business performance is achieved in form of improved sales, high production and enlarged business establishment. The firm networks facilitate firms to achieve economies of scale, transaction costs and positive externalities. However, the study highlighted that very little

attention has been paid on policy interventions by the government to improve firm internal competency through the formation of networks.

### **2.2.2. Human Capital**

In their study, Hacker, Bodendorf, and Lorenz, (2017) discovered that employees are the pillars of firm networks since they work together to brainstorm ideas through discussion and develop them into new innovations. These employees leverage on networks to communicate and share knowledge for the purpose of creating innovative ideas. However, very little is known about the roles which employees play in these networks since most interactions occur in the informal structure of the organization which makes it almost difficult to observe and identify the participating employees. They also reiterate that interactive structures between employees are not well defined in most firms leading to loss of tacit knowledge.

Backstram and Bengtsson (2019) carried out a study which revealed that employees not only generate innovative ideas but also play a vital role in developing new innovations and implementing them for the organization. Their study however was mainly based on those employees who have been assigned specific innovation functions within the organization such are those in charge of the R&D division, strategy and planning and marketing thus disregarding those ordinary employees who are not attached to any of these divisions, yet they are significant in driving the innovation process. It is therefore necessary to pay attention to the diverse nature of non-managerial and non-R&D employees in the development of new innovations within the organization by defining their roles and their significance in the innovation process.

Wadell, Bjork, & Magnusson (2014) carried out a study on how R&D employees use their networks to acquire information about users' feedback on their products. In their study, they

discovered that R&D employees in those firms with high innovation performance understand better the needs of their users than those that have poor innovative performance. The study however failed to address how these employees relate and how the value that is derived from their network facilitate innovation. This calls for further research on the kind of relationships established between these employees in terms of how they are created, what benefits they derive for the firm and how best they can be strengthened to foster high notch innovations. Akesson, Skalen, Edvardsson, & Stalhammar (2016) in their study on how frontline employees contribute to service innovation found out that these employees are only relevant in the start-up phase on the innovation process. The study however failed to highlight the role these employees play in the whole process of innovation from idea to launch. Another limitation of the study was that it considered the role of only key employees in the firm and failed to address that of other staff. Therefore, more research on the role of all firm employees in the whole process of innovation is vital to establish the contexts and stages in which they play different roles. Sadegh Sharifirad and Ataei (2012) in their study on organization culture and innovation culture points that for firms especially in the service industry have not defined the necessity to continuously innovate in their mission and vision statements and core values. The organization structure does not well define the communication channels to be followed and how information should flow within the firm. Employees too are not well motivated to open their tacit mind. They therefore recommend that for firms to be successful, they need to have shared organizational believes and understanding. They must develop an innovative culture with innovative mission and vision statements, open communication without hierarchical structures to attract and retain talented employees, create a safe environment that facilitates the innovative process through collaboration with external partners across

organizational boundaries, sharing of knowledge and lucrative reward schemes to appreciate contribution and motivate employee creativity.

Cheruiyot (2012) in his study on institutionalizing knowledge management practices in manufacturing firms in Kenya discovered the fact that Kenyan manufacturing firms do not have well defined policies regarding reward and recognition of employees who drive the organization to success through collaboration and knowledge sharing for the sake of innovating successfully. He therefore emphasizes the need for firms to create a culture in which employees who contribute to creative ideas should be rewarded and recognized by developing right reward systems which clearly state the expectations of each employee and the benefits that will accrue from their contribution to innovation.

### **2.2.3 Firm Absorptive Capacity**

Tsai (2001) carried out a study which revealed that firms developing the capacity to absorb new knowledge through intensifying its R&D activities and developing proper system to acquire external knowledge for innovation, yet most of them have not invested as required in R&D. The study too did not address the process of gaining access to the said knowledge through collaboration with other firms, which is quite different from investing in R&D. He emphasized on the need of firms to seek external access to new knowledge and develop internal capacities to assimilate the knowledge for the sake of learning and innovating new products and services. According to Ndiege, Herselman, & Flowerday (2012), absorptive capacity acts as a link between external knowledge, firm performance and the innovative capacity of firms since it enables firms to discover new opportunities and integrate them with their existing knowledge base. However, this concept has not been well researched due to the scanty literature available. Most organizations in

developing countries are unable to measure their absorptive capacity and determine the right levels which are required to enhance innovation, hence calling for further empirical research to give more insights on this concept.

In their study on how SME's in Kenya apply their absorptive capacity and adopt their ICT strategies, Ndieng Herlseman and Flowerday (2012) discovered that most of the SME's had low absorptive capacity due to lack of collaboration with other firms. They prefer working in silos rather than engaging with other entities such as research institutions, universities, suppliers' clients and even their competitors. The few that had high absorptive capacity were discovered to have superior IT adoption strategies that enable them to analyse and assimilate new knowledge at a faster rate for the purpose of innovation. The study however discovered a research gap in that most firm managers do not understand what absorptive capacity entails and how it contributes to innovation. Firms lack proper IT systems to help capture and process new knowledge for innovation. The authors recommend more studies on the concept and sensitization to firm managers on enhancing their absorptive capacity in order to improve their IT adoption strategies.

#### **2.2.4. The Concept of Innovative Capacity of Firms**

In their study on innovative capacity, organization culture and gender, Cropley and Cropley, (2017) discovered that in the turbulent business environment, the ability to continuously innovate successfully has been regarded as essential to organizational performance. Creativity and innovation are the main pillars of competent economies. They further argue that human capital contributes greatly in defining the innovation capacity of a firm. The stronger the innovative capacity is, the more effective the innovation process and the higher the firm performance. The study however does not focus on other internal environment conditions that influence the creation

of innovative networks such a management support and employees' participation. It also fails to outline clearly the innovation strategies adopted by firms.

Banu (2018) in his study on measuring innovation using key performance indicators found out that for a firm to successfully innovate, various key people must be identified and there must be a defined time frame, proper planning and effective decision making. He stresses that management should never view innovation as a linear sequential flow of activities and that failure is frequent in organizations which take risks to innovate and therefore it can be used as an opportunity to reinvent, which is not a culture of many firms. The innovation process should be open both to innovators and adopters of the innovation yet most firms only capitalize on the input of senior employees and stakeholders are not involved in decision making regarding innovation. Efficient innovation processes not only guarantee successful innovation, but it can influence a successful and high innovation rate. Therefore, the process of innovation requires proper planning, setting realistic objectives and constant monitoring of activities which unfold and measuring results. They therefore recommend more research on collaborative innovation, failure as a process of learning and proper planning to ensure that innovation projects are completed on time.

Kuczmariski (2003) in his study on what is innovation? And why aren't companies doing more of it? argues that in many organizations, the concept of innovation has been misunderstood thus its full potential has not been realized. The importance of developing and implementing an innovative culture within organizations has not been given the required attention. While many organizations speak widely on the concept, very few have taken the initiative to embrace it and streamline it in organizational processes as a core function while creating an environment that enhances its growth as a measure of improving performance. He advises that there are many benefits that accrue from

embracing an innovative culture and make innovation a core function in a firm's 'to do' list. Therefore, firms are required to cultivate innovation and implement systems that will enhance its success and longevity.

Codini (2015) States that innovation is an interesting concept due to its crossing activity in relation to the firm's department and the firm's boundaries in search of new knowledge through the contribution of external parties thus making knowledge a strategic resource in new products and services development. He however reiterates that while literature about network change and development is abundant, scholars have not featured a lot on the contribution of networked structures of a firm on improving its innovation especially those which adopt an evolutionary approach.

### **2.3. Summary of literature review and Knowledge Gaps**

Literature review indicates that innovative capacity of firms in Kenya to innovate is greatly influenced by firm networks, firm employees, firm absorptive capacity and the firm internal environment. The review identified a research gap where most firms fail to address these factors in increasing their innovative capacity to beat competition.

The literature reviewed on the Kenyan banking sector revealed that networking is vital in the innovation process, yet most Commercial banks have failed in collaborating with other key innovators to seek and internalize external knowledge to facilitate innovation. It also established that relationships between the firm and their stakeholders is weak since they have not formed collaborative networks that are a rich source on knowledge which is the most vital resource for innovation. In addition to this, the review of literature also established a knowledge gap where

there is lack of understanding on entrepreneurial networks in developing countries specifically Kenya where there exist weak links between Kenyan firms and the national innovation system.

The literature review established that in many firms have poor employee relationships hence the tacit mind which is a rich source of innovative ideas is not well exploited. Another research gap was that organizations lack proper structures with well-defined systems of communication hence poor information flow and poorly defined roles of staff in the innovation process. The review too established that in many firms, innovation is mainly the business of senior staff. They disregard the fact that even the most junior staff in an organization may be having ideas which can be leveraged on for game changing innovation. Most organizations have not put in place reward and recognition systems to ensure that employees are well motivated to drive innovation.

The literature review identified a research gap where firms put in very little effort in seeking new knowledge from external sources that can be useful in improving on existing products and services while innovating new ones. It also established that firms too are unable to measure their absorptive capacity since the concept is not well understood especially by top management. Another gap in the research was that the organization culture in many firms is not conducive for staff to work freely and generate innovative ideas while learning from mistakes.

The review also established that in most firms, the concept of innovation has been misunderstood and its full potential has not been realized thus the importance of developing an innovative culture has not been given priority. Little is done to improve on the already existing products and services as well as generating new ones thus firms end up losing revenue and their competency in the market.

This study sought to concentrate towards on this knowledge gap by integrating the determinants of the firm internal environment and the related macro-factors which include firm networks, human capital and absorptive capacity on the innovative capacity of Commercial banks in Kenya. The literature review highlighted several gaps which indicate that none of the studies have been conceptualized to examine these gaps which have been identified in the literature review as detailed in Table 2.1 below;

**Table 2.1: Summary of Previous Empirical Studies and Knowledge Gaps**

| <b>Author and year</b>     | <b>Title</b>                                                                                                                                                 | <b>Variable</b> | <b>Findings</b>                                                                                                                                                              | <b>Research Gaps</b>                                                                                                                                                                                                                                             |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| D'Andreta, et al. 2016     | Dominant Cognitive Frames and the Innovative Power of Social Networks.                                                                                       | Firm networks   | Networking is vital in both service and manufacturing firms.<br>Efforts to improve innovation through firm networks are on the rise in both service and manufacturing firms. | Capacity of networks to produce relevant information has not been clearly defined.<br>Firms do not value network as a means of facilitating innovation.                                                                                                          |
| Whelan, 2016               | Informal social networks within and between organizations: on the properties of interpersonal ties and trust.                                                | Firm networks   | Most work in organizations gets done through employee informal networks.<br>Communication is poor in firms with no well-defined structures of how information should flow.   | Scanty research on social networks. Firm networks, formal and informal networks.<br>Firms lack well defined structures on how information should flow and how employees voice their opinion.                                                                     |
| Najafi-Tavani, et al. 2018 | How collaborative innovation networks affect new product performance: Product innovation capability, process innovation capability, and absorptive capacity. | Firm networks   | Collaborative networks with stakeholders improve new product performance through development of new products, services and processes                                         | Evidence on whether relationships between collaborative networks and innovative capabilities are pegged on these networks in missing.<br>Relationship between the firm and stakeholders is weak.<br>Collaboration between firms is not emphasized by many firms. |
| Dagnino et al. 2015        | Interorganizational network and innovation: A bibliometric study and proposed research agenda                                                                | Firm networks   | Interorganizational networks impacts greatly on innovation within the firm                                                                                                   | Research overlooked interpersonal, intrafirm and business networks.                                                                                                                                                                                              |
| Ongong'a, 2011             | Networking in the Kenyan informal sector: An attempt to                                                                                                      | Firm networks   | SME's which maintain strong and regular networks thrive in business due to access to pools for resources for innovation.                                                     | Lack of understanding on entrepreneurial networks in developing countries specifically Kenya.                                                                                                                                                                    |

|                                   |                                                                              |               |                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                              |
|-----------------------------------|------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                   | manage the market failures.                                                  |               |                                                                                                                                                                                                                                                                                                                                                                       | Weak links between Kenyan firms and the National innovation system.                                                                                                                                                                          |
| Nganga, 2008                      | Determinants of firm networks in Kenya.                                      | Firm networks | Interfirm networks play a critical role in dissemination of information, facilitating collective action and lowering transaction costs.<br>Networks facilitate firms to achieve economies of scale, transaction costs and positive externalities.<br>Business performance is achieved in form of improved sales, high production and enlarged business establishment. | Very little attention given on policy interventions by the Kenyan government to improve firm internal competency through network formation.                                                                                                  |
| Hacker et al. 2017                | A framework to identify knowledge actor roles in enterprise social networks. | Human capital | Employee participation is the pillar of the formation of firm innovative networks.<br>They possess tacit knowledge which is the most vital innovation ingredient.                                                                                                                                                                                                     | Roles played by employees in formation of innovative networks not clearly defined because most of the interaction is done in informal settings<br>Poor employee relationships thus tacit knowledge is not well exploited leading to its loss |
| Backstrom & Bengtsson, 2019       | A mapping study of employee innovation: Proposing a research agenda.         | Human capital | Employees in firm play a critical role in idea generation, developing and implementation of innovations.                                                                                                                                                                                                                                                              | Study only majored on key employees within the organization and overlooked ordinary employees who too play a critical role in innovation.                                                                                                    |
| Wadell, Björk, & Magnusson, 2014. | How do R&D employees use their social networks to acquire user information?  | Human capital | R&D employees in firms with high innovative performance understand better the needs of their users better than those with lower innovative performance.<br>Teams formation in firms helps in exploring and exploiting personal ideas among workers.                                                                                                                   | The study has not highlighted how these employees relate, what is derived from the networks created and how those networks can be leveraged to produce high notch innovations.                                                               |

|                                      |                                                                                                                                                      |                     |                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                     |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Akesson, et al. 2016.                | Value proposition test-driving for service innovation: How frontline employees innovate value propositions.                                          | Human capital       | Front line employees are only relevant in the start-up phase of the innovation process.<br>It is vital to ensure that all employees are involved in the innovation process from initiation to launch.               | The role of front-line employees in the whole process of innovation has not been highlighted.<br>The study considers only the role of senior employees as vital in the process of innovation thus disregarding junior employees.                                    |
| Sadegh, Sharifirad & Ataei, 2012     | Organizational culture and innovation culture: Exploring the relationships between constructs.                                                       | Human Capital       | Organizational culture is a critical driver of efficiency through innovation in firms. Innovation should be a key strategy of firms.<br>Reward and recognition are vital to motivate employees to share information | Importance of organization culture in organizations is not emphasized. Necessity to innovate has not been well defined in mission vision statements of most organizations.<br>Firms lack open communication hierarchies which allow employees to share information. |
| Cheruiyot, 2012                      | Institutionalization of Knowledge Management in Manufacturing Enterprises in Kenya                                                                   | Human Capital       | Reward and recognition of employees is critical in determining the innovative capacity of firms in the manufacturing industry.                                                                                      | Most firms in the manufacturing industry do not have well defined policies in regard to rewarding and recognizing employees who drive the innovation process                                                                                                        |
| Tsai, W. 2001.                       | Knowledge transfer in Intraorganizational Networks: Effects of Network Position and Absorptive Capacity on Business Unit Innovation and Performance. | Absorptive capacity | Firms develop their capacity to absorb new knowledge through intensifying R&D activities.                                                                                                                           | Process of accessing and acquiring new knowledge from external sources is not properly highlighted.<br>R&D in firms has been given very little attention thus diverting resources to other units.                                                                   |
| Ndienge, Herselman & flowerday, 2012 | Absorptive capacity: Relevancy for large and small enterprises.                                                                                      | Absorptive capacity | AC acts as a link between external knowledge, firm performance and the innovative capacity of firms by                                                                                                              | The concept of AC has not been well researched due to scanty literature. Organizations are unable to measure their                                                                                                                                                  |

|                          |                                                       |                                         |                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                         |
|--------------------------|-------------------------------------------------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                                       |                                         | discovering and integrating new opportunities with existing knowledge.                                                                                                                                                                                                                                                                                         | absorptive capacity to determine the required levels.<br>Poor sharing of knowledge from external sources thus new knowledge is not properly utilized.                                                                                                                                                                   |
| Ndienge, Herselman, 2014 | How Kenyan firms measure their absorptive capacity    | Absorptive capacity                     | Most firms have low absorptive capacity due to lack of collaboration with other firms.<br>Work in most firms is done in silos rather than through engagement research institutions and other stakeholders.<br>Firms with high AC have superior IT adoption strategies to help analyze and assimilate new knowledge.                                            | Firm managers have very little knowledge on the value of firm absorptive capacity to innovation.                                                                                                                                                                                                                        |
| Cropley & Cropley 2017   | Innovative capacity, organization culture and gender  | Innovative capacity of Commercial banks | Ability to continuously innovate is essential in for organizational performance.<br>Creativity and innovation are the main pillars of competent economies.                                                                                                                                                                                                     | The conditions that favour creativity and innovation in firms not been highlighted in the study.<br>Innovation strategies in firms are not clearly communicated.                                                                                                                                                        |
| Banu, 2018               | Measuring innovation using key performance indicators | Innovative capacity of Commercial Banks | Key people, defined timeframes proper planning and effective decision making are key indicators for successful innovation.<br>Innovation is not a linear sequential flow of activities<br>Failure is frequent in organizations which take risks to innovate.<br>Innovation is a process which should be open to both innovators and adopters of the innovation | The study indicated how many firms fail to plan properly for innovation projects thus most projects are abandoned along the way or are not completed in the stipulated time frame.<br>Most firms do not tolerate mistakes as part of the learning process.<br>Only key employees are involved in the innovation process |

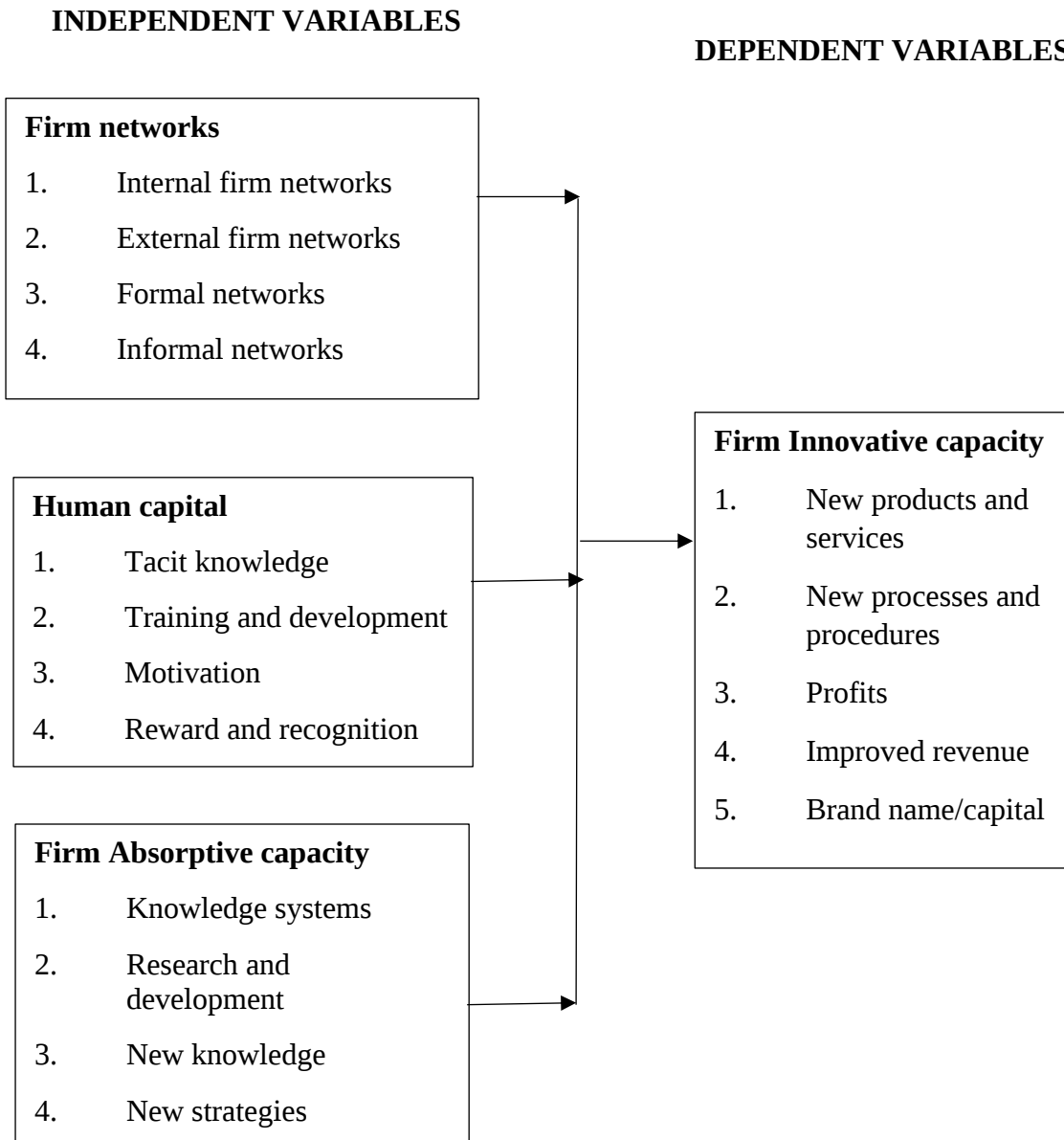
|                    |                                                                                |                                         |                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                         |
|--------------------|--------------------------------------------------------------------------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Kuczmariski, 2003. | What is innovation?<br>And why aren't companies doing more of it?              | Innovative capacity of commercial Banks | Many benefits accrue from embracing an innovative culture and making innovation a core function in a firm's "to do" list. Many firms preach loudly about the concept of innovation but very few have taken the initiative to embrace and streamline it in their processes. | In most firms, the concept of innovation has been misunderstood and its full potential has not been realized. The importance of developing an innovative culture has not been given priority in the study.                                                                                              |
| Codini, 2015       | Business networks along innovation life cycle.                                 | Innovative capacity of commercial Banks | Innovation is an interesting concept due to its cross-cutting activity in relation to firm department and firm boundaries in search of new knowledge through contribution of external parties.                                                                             | Scholars have not featured most on the contribution of networked structures of a firm in improving innovation.                                                                                                                                                                                          |
| Mwangi, 2014       | The influence of innovation on small and medium sizes enterprises (SME) growth | Innovative capacity of commercial Banks | Lack of innovation negatively affects the growth of SME's thus hampering the competitiveness of firms in the service and manufacturing industry. A competent workforce is a vital ingredient in successful innovation                                                      | Firms especially in the service and manufacturing industry have failed to develop technologies and other competencies which would enable them to seek acquire and apply knowledge from external sources for innovation.<br><br>Firms lack the required human capital to drive the process of innovation |

Source: Researcher (2019)

## **2.4. Conceptual Framework**

The study established a conceptual framework guided by the theories reviewed which proposed that the firm internal environment consisting of firm networks, human capital, and firm absorptive capacity influence the innovative capacity of Commercial banks in Kenya. Thus, the study proposed that firm networks, human capital, and firm absorptive capacity influence innovation capacity of commercial banks in Kenya. In the study, firm networks, human capital, and firm absorptive were regarded as the independent variables while the innovative capacity of Commercial banks in Kenya was regarded as the dependable Variable. This is illustrated in the conceptual framework in figure 2.1 below:

**Figure 2.1: Conceptual framework Model of the Innovation Capacity of Commercial Banks in Kenya**



**Source:** Researcher (2019)

## 2.5 Operationalization of Study Variables

The operationalization of the study variables is important as it facilitates measurement of variables quantitatively and thus enabling the testing of hypothesis. The study variables comprise of firm networks, human capital, firm absorptive capacity and the innovative capacity of commercial banks in Kenya as shown in table 2.2 below:

**Table 2.2: Operational Framework**

| Variable                                         | Orientation          | Objectives                                                                                                  | Indicators                                                                                                 | Scale of Measurement               | Tool of Analysis                | Location in the Questionnaire |
|--------------------------------------------------|----------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------------------|-------------------------------|
| Firm networks                                    | Independent Variable | To establish the influence of firm networks on the innovative capacity of Commercial banks in Kenya         | Internal firm networks<br>External firm networks<br>Formal networks<br>Informal networks                   | Ordinal using 5-point Likert Scale | Descriptive Regression Analysis | Section B Question 8          |
| Human capital                                    | Independent Variable | To establish the influence of firm employees on the innovative capacity of Commercial banks in Kenya.       | Skills (Tacit knowledge) Training and development<br>Motivation<br>Reward and recognition                  | Ordinal using 5-point Likert Scale | Descriptive Regression Analysis | Section C question 9          |
| Firm absorptive capacity                         | Independent Variable | To establish the influence of firm absorptive capacity on the innovative capacity of Commercial banks Kenya | KM systems<br>R&D<br>New knowledge<br>Knowledge initiatives<br>New strategies                              | Ordinal using 5-point Likert Scale | Descriptive Regression Analysis | Section D Question 10         |
| Innovative capacity of Commercial banks in Kenya | Dependent Variable   | To establish the joint effects of the independent study variables                                           | New products, services, procedures and business models<br>Profitability<br>Improved sales<br>Brand capital | Ordinal using 5-point Likert Scale | Descriptive Regression Analysis | Section E Question 11         |

Source: Researcher (2019)

## 2.6 Study Hypothesis

Emerging from the conceptual model in figure 2.1, the following hypotheses of the relationship in the study were formulated:

Hypothesis 1.

$H_0$      *Firm networks do not influence the innovative capacity of Commercial banks in Kenya.*

$H_a$      *Firm networks influence the innovative capacity of commercial banks in Kenya*

Hypothesis 2

$H_0$      *Human capital does not influence the innovative capacity Commercial banks in Kenya.*

$H_a$      *Human capital influences the innovative capacity of commercial banks in Kenya*

Hypothesis 3

$H_0$      *Absorptive capacity does not influence the innovative capacity of Commercial banks in Kenya.*

$H_a$      *Absorptive capacity influence the innovative capacity of commercial banks in Kenya*

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0. Introduction**

This chapter covers the methodology that was used in the study in detail. It presents the research design, area of study, the target population, sampling, appropriate sampling and sampling procedures, data collection tools and techniques used, including the research instruments, validity and reliability testing techniques, data analysis techniques as well as the research ethics.

#### **3.1. Research Design**

A research design provides a framework through which data is collected and analysed. It reflects decisions concerning the priority given to a range of dimensions of the research process (Bryman, 2004). It consists an arrangement of conditions for data collection and analysis while aiming at combining relevance to the research purpose with economy in the procedure followed (Kothari, 2012). Descriptive research design is useful since it significantly describes the variables of interest by analyzing their relationships and it provides valuable and accurate answer to the research questions (Kombo & Tromp, 2006). Descriptive research makes use of six Ws (who, what, when, where, why, how) of research (Gupta & Rangi, 2014). It is therefore deemed as the most suitable in gathering information on the influence of Firm internal environment on the innovative capacity of commercial banks in Kenya.

The study used descriptive research design which is a research design that gives a true picture of the way things are happening (Mugenda & Mugenda 2003). It applied descriptive data to answer research questions on; the influence of firm networks on the innovative capacity of banks in Kenya; the influence of Human capital on the innovative capacity of Commercial banks in Kenya and the

influence of firm absorptive capacity on the innovative capacity of Commercial banks in Kenya. Descriptive data also helped explain the relationship between the variables which influence the innovative capacity of commercial banks in Kenya.

The independent variables were tested individually to see whether each variable is responsible for changes in the dependent variable, thus the use of the descriptive research design which was used to describe the characteristics of existing phenomenon and for obtaining information in the area of research on the influence of firm internal environment on the innovative capacity of Commercial banks in Kenya.

### **3.2 Target Population**

A target population refers to the total universe of units with similar characteristics from which a researcher intends to generalize the results of the study (Mugenda & Mugenda, 2003). It is not necessarily people. It could be nations, cities, organizations, regions among others (Bryman, 2004). Van Rensburg (2009) defines a target population as the entire group of persons or sets of objects and events the researcher intends to study. It contains all the variables of interest to the researcher.

The target population in this study consisted of the 43 Commercial banks operating in Kenya, whose respective head offices are in Nairobi. The target respondents in these Commercial banks were heads of innovation sections, strategy divisions and marketing divisions, R&D units and ICT sections. This is because they were better placed to provide information on how their respective banks succeed in innovation of new products and services.

The list of all commercial banks in Kenya is contained in appendix IV.

### **3.3. Sample Size and Sampling Procedure**

According to Kothari (2012), a sample consists of the selected respondents who represent the entire population while (Bryman, 2004) defines a sample as the segments of the population that is selected for investigation. According to Mugenda and Mugenda, (2003) a sample is a smaller group or sub-group obtained from the accessible population. This sub-group is selected in such a way that it represents the whole population and that it has the relevant characteristics of the population under review.

The study used the census method of sampling which is defined by Bryman, (2004) as the enumeration of an entire population. He further states that the method gathers information about every member in the target population thus giving detailed and accurate results making it reliable for a heterogeneous population. The census sampling method was necessary for the study since it attempts to get accurate information about a population that can be used for the purpose of planning, budgeting and policy formulation Frankfort-Nachmias (1996). The researcher therefore collected data from all the 43 commercial banks in Kenya for the purpose of the study. Information obtained was useful since it can be used future planning and formulating policies both by the banking industry and the government.

### **3.4. Research Instruments**

Frankfort-Nachmias (1996) indicates that there are several instruments which a researcher can use in data collection. Gupta and Rangi (2014) add that each of them is different from the other regarding aspects such as cost, time and other resources at the disposal of the researcher. They include questionnaires, observation, interview guide, focused group and discussions guide among others. In the study, the researcher used primary data due to its originality, proximity to truth and ease to control errors. (Cooper & Schindler, 2008).

The study used a structured questionnaire which was designed according to the study objectives to collect data from primary sources. Majority of the questions were closed ended to minimize variability of response. However, some questions were open ended for respondents to give their response, opinion or suggestions. The data in the questionnaire was measured using 5-point Likert scale (1 - 5).

The data was collected from respondents using a drop and pick letter on the assumption that they are professionals who have a busy schedule and thus they require enough time to answer the questions at their own free time. Contact information was picked while dropping the questionnaire to follow up by reminding the respondents to fill in the questionnaires.

### **3.5. Reliability and Validity of the Instrument**

Before the study embarked on active data collection, the researcher ensured that the instruments were tested for validity and reliability, by conducting a pilot test. These tests are necessary for establishing as well as ensuring the reliability and validity of the tools designed for collection of data in the research. In fact, pilot testing exposes the weaknesses of the tools and provides for its respective review and improvements through editing, to ensure that the tool will be appropriate for collecting the desired data during the expected time span. It is during this time that the researcher identifies any possible problems associated with the tool (Kvale, 2007).

#### **3.5.1 Reliability Tests**

Mugenda and Mugenda (2003) define reliability as a measure of the degree to which a research instrument yields consistent results or data after repeated trials. (Van Rensburg, 2009) argues that reliability is the degree to which a scale yields results or scores while Kvale, (2007) adds that

reliability tests are carried out for establishing critical issues of the study which include; sources of data, data collection methods, time taken in data collection, biasness and accuracy of the tool.

The study used the Cronbach's alpha internal consistency technique to test for reliability of the questionnaire. Internal consistency of data collected was determined by correlating the items in the questionnaire to obtain a coefficient of correlation, this time known as the Cronbach's alpha ( $\alpha$ ). The absolute value of  $\alpha$  varies between 0 and 1. In the social sciences, if the value of Cronbach's alpha is less than 0.7, the tool is classified as having unsatisfactory internal consistency reliability or simply being inconsistent. However, a value of Cronbach alpha greater than or equal to 0.7 indicates higher consistency in which case it will be accepted otherwise it will be reviewed to retest for reliability.

### **3.5.2 Validity Tests**

According to Van Rensburg (2009), validity test is the degree to which a scale measures what it is supposed to measure. He further asserts that there are four ways of estimating an instruments validity; predictive validity, concurrent validity, content validity and construct validity.

Content validity which refers to how effectively a measurement tool tap into the various aspects of the specific construct in question Van Rensburg (2009), was used to measure internal validity of the data collection instrument in this study.

To test validity of the questionnaire, two questionnaires were issued to two respondents each from two Commercial banks deputizing the head of the target divisions. Thereafter the researcher used the data collected to improve on the questionnaire after receiving responses by editing the items found to be inconsistent. In the two commercial banks where piloting was done, the researcher ensured that the two employees who participated in the pilot test did not fill questionnaires for the main study

### **3.6 Data Collection Procedures**

Gupta and Rangi (2014) content that systematic gathering of information relevant to the research sub-problems involves using methods such as interviews, participant observations, focus group discussions, narratives and case histories. The study used a structured questionnaire which had closed and some open-ended questions to allow the respondents to give their responses.

Once the researcher had all the required documentation, she conducted a pilot testing on the research tool to test on reliability and validity. The respondents in pre-test did not participate in data collection. After the research instrument was successfully reviewed, the researcher begun active data collection.

Since the data was being collected from established formal organizations, the researcher first had to seek permission to collect data from the management of the bank after which the researcher and the respondents made arrangement on when and how the data would be collected. Upon receiving the filled questionnaire, the researcher first confirmed the entries as well clarifying issues arising in questionnaire filling and any unclear issues.

### **3.7 Data Processing and Analysis**

Data analysis comprises the process of editing, coding and tabulation of the collected data into simpler summaries (Cooper, & Schindler, 2008). Once data collection was complete, it was checked to correct any errors and omissions. It was then be coded to facilitate its entry in the computer for analysis. The study applied the Statistical Package for Social Sciences (SPSS) version 23.0) and MS. Excel to analyze the data and generate descriptive statistics such as frequency counts, percentages, mean, mode and standard deviation. Content analysis was measured based on the respondent's answers in relation to the objectives of the study.

Multiple Regression analysis was then conducted to test the effect of the relationship between the independent variables (firm networks, human capital and firm absorptive capacity) and the dependent variable (Innovative capacity of commercial banks in Kenya) as shown in the model below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e \dots\dots\dots (i)$$

Where Y= Innovative capacity of commercial banks in Kenya.

X1= Firm networks

X2= Human Capital

X3= Firm Absorptive capacity

$\beta_0$  = a constant (value of the dependable variable when all the independent variables are 0)

$\beta_1, \beta_2, \beta_3$ = the regression coefficients or change induced by  $X_1, X_2$  and  $X_3$

e = error term

The study correlated each of the Independent Variable; firm networks, Human Capital and Firm absorptive capacity to the Dependent Variable; innovative capacity of Commercial banks in Kenya to establish whether there is any relationship. Thereafter, to successfully estimate the model, the study obtained a mean to each of the study variable; Firm Networks, Human Capital and Firm absorptive capacity and innovative capacity of Commercial banks in Kenya using weighted least square. The means obtained for all the independent variables; firm networks, Human Capital and Firm absorptive capacity was regressed against the mean obtained for the dependent variable; innovative capacity of Commercial banks in Kenya

During estimation of the study model, the study tested the hypotheses using Analysis of Variance (ANOVA), using Pearson's product method. The study used Pearson's product method at 0.05 level of significance (p-value  $\leq .05$ ). Various interpretations were made based on regression

results to establish the significance at the 95% confidence level of the independent variables in determining the dependent variable.

### **3.8. Diagnostic Tests**

Before regression analysis, the researcher conducted diagnostic tests to determine suitability of data set for regressing. The diagnostic tests were used to test the general information of the respondents and its effect on the main objective of the study. They included multicellularity, Normality and Heteroscedasticity. Normality test was done using the P-P plot to establish whether the data sets were normally distributed According to Norusis (2006), for valid references to be made from the regression analysis, the data sets of the regression are expected to follow a normal distribution. Multicollinearity was checked using the variance inflation factor (VIF) to show correlation between the variables on assumption that if VIF was between 1-5, then the variables would not be correlated hence the test was to be deemed valid. Heteroscedasticity test is important in examining whether there is difference in residual variance of the observation period to another period of examination (Wanyama, 2018).

### **3.9. Ethical Issues**

The study ensured that the research was conducted ethically. First the researcher obtained a letter from KCA University as consent to conduct the study. The researcher also had to obtain a permit from National Council of Science and Technology (NACOSTI) to conduct the research. The study ensured that the data gathered from the respondents remained confidential and secure and that it was used only for the purpose of the study. The respondents were allowed to fill the questionnaire anonymously if they so wished to avoid exposing confidential information. A letter of request to participate in the study was addressed to the respondents to ensure informed consent for participation in the study.

## CHAPTER FOUR

### DATA ANALYSIS, FINDINGS AND DISCUSSIONS

#### 4.0 Introduction

This chapter presents the data analysis and interpretation of findings from the study. These results were presented using tables and figures for ease of understanding and were interpreted based on the study objectives. Descriptive statistics and regression analysis were used to present analysis of quantitative data followed by discussions of the findings based on the literature previously reviewed.

#### 4.1 Response Rate

The researcher distributed a total of 43 questionnaires, one questionnaire per each bank to senior employees of all the commercial banks in Kenya. Out of these, 39 questionnaires were fully filled and returned to the researcher giving a response rate of 90.7%. This percentage is sufficient for the study according to Gupta and Rangi (2014) who state that a response rate of above 70% is suitable for any study in research. The findings are presented in table 4.1 below

**Table 4.1: Response Rate**

| Variable     | Frequency | percentage |
|--------------|-----------|------------|
| Response     | 39        | 90.7%      |
| Non response | 4         | 9.3%       |
| Total        | 43        | 100%       |

Source: Research data (2019)

#### 4.2 Reliability Test

The study used Cronbach's alpha in SPSS, which is used to measure internal consistence (how closely related a set of questions or items in the data collection instrument are related) to measure

reliability of the research instrument. According Norusis (2006), the minimum acceptable value of Cronbach's alpha is 0.7. in the study, the value of the Cronbach's alpha is 0.722 as indicated in table 4.2 below: This indicates high internal consistency for the scale used in the questionnaire.

**Table 4.2: Reliability Test**

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|------------------|----------------------------------------------|------------|
| .722             | .798                                         | 29         |

Source: Research data (2019)

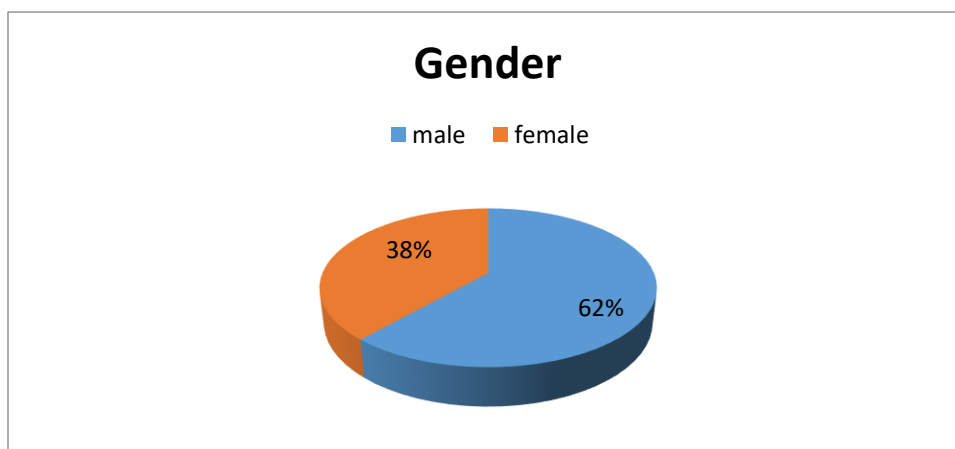
### 4.3 General Information

The researcher sought to establish general information about the respondents in order to find out their appropriateness in the study. These included Gender, age, level of education and length of service in the banking industry. The findings are show below:

#### 4.3.1 Gender

It was established that majority of the respondents were male at 62% while female respondents were 38%. This implies that sample constituted both male and female with male respondents being dominant and this is summarized in figure 4.1 below:

**Figure 4.1: Gender of respondents**

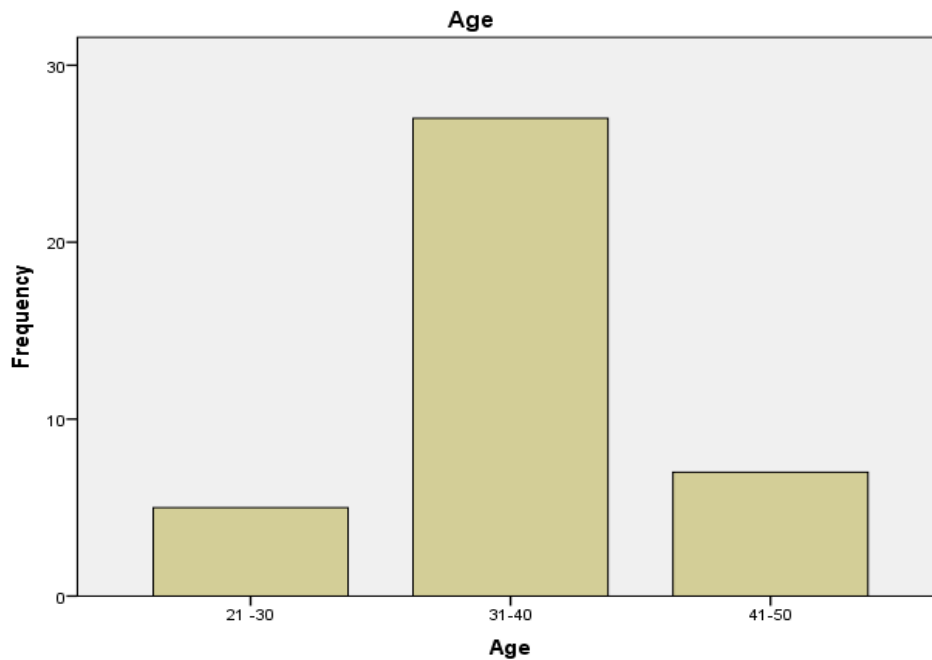


Source: Research data (2019)

### 4.3.2 Age of Respondents

In the study, most of the respondents were aged between 31 and 40 years old followed by those aged between 41 and 50 years. The findings are shown in the figure 4.2 below.

**Figure 4.2: Age of Respondents**

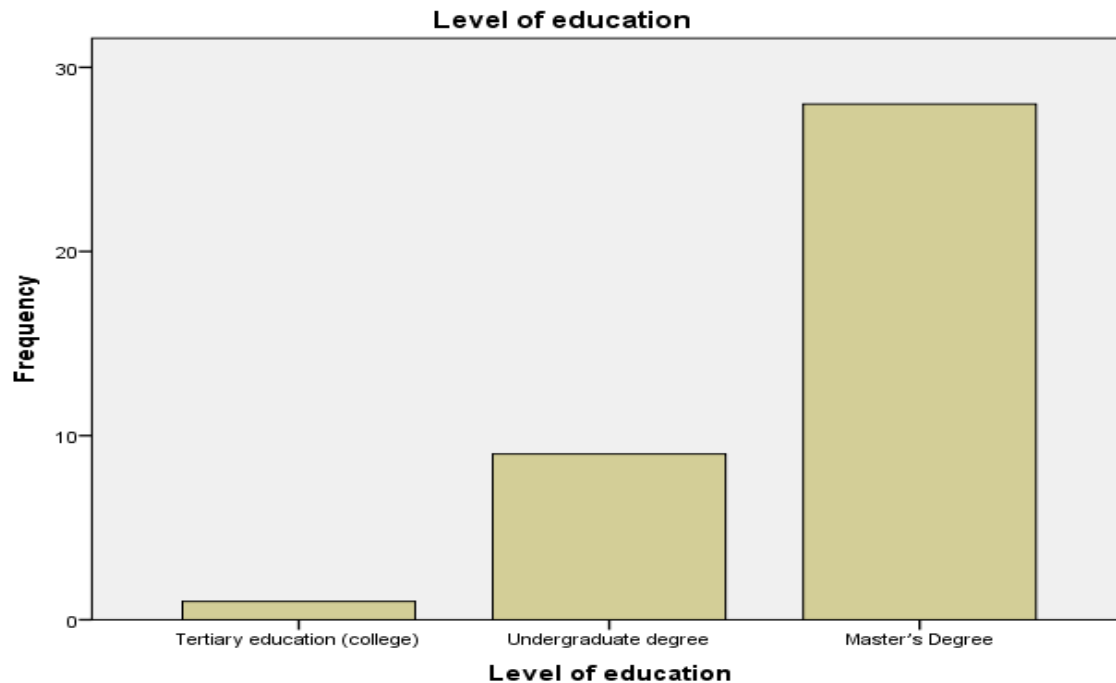


Source: Research data (2019)

### 4.3.3 Level of Education of Respondents

The study findings revealed that a majority of the respondents had attained a master's degree, followed by those who had attained the undergraduate level as shown in the graph below. The study found out that about 71.8% held master's degree, 25.6% of the respondents hold undergraduate degree and 2.6% of the respondents have tertiary education. None of the respondent had secondary or PhD education levels. This clearly indicates that high levels of education enhance competency particularly in processing more complex information and make decisions regarding bank innovations. The results are indicated in figure 4.3 below:

**Figure 4.3: Level of Education for Respondents**

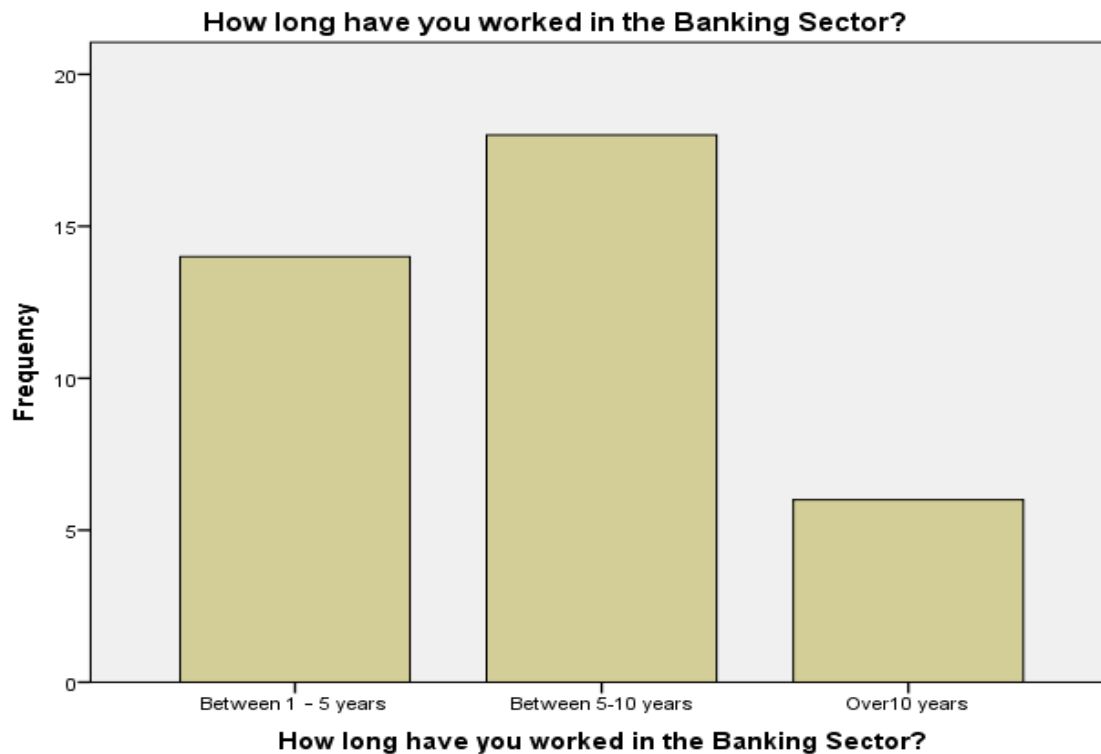


Source: Research data (2019)

#### **4.3.4 Length of Service in the Banking Industry**

The study findings revealed that most of the respondents in the study had worked in the banking industry for a period of between 5 and 10 years, and the least of them had worked in the industry for over 10 years. This was an indication that most of the participants had sufficient experience in the banking industry. This is shown in figure 4.4 below:

**Figure 4.4: Length of Service in the Banking Industry**



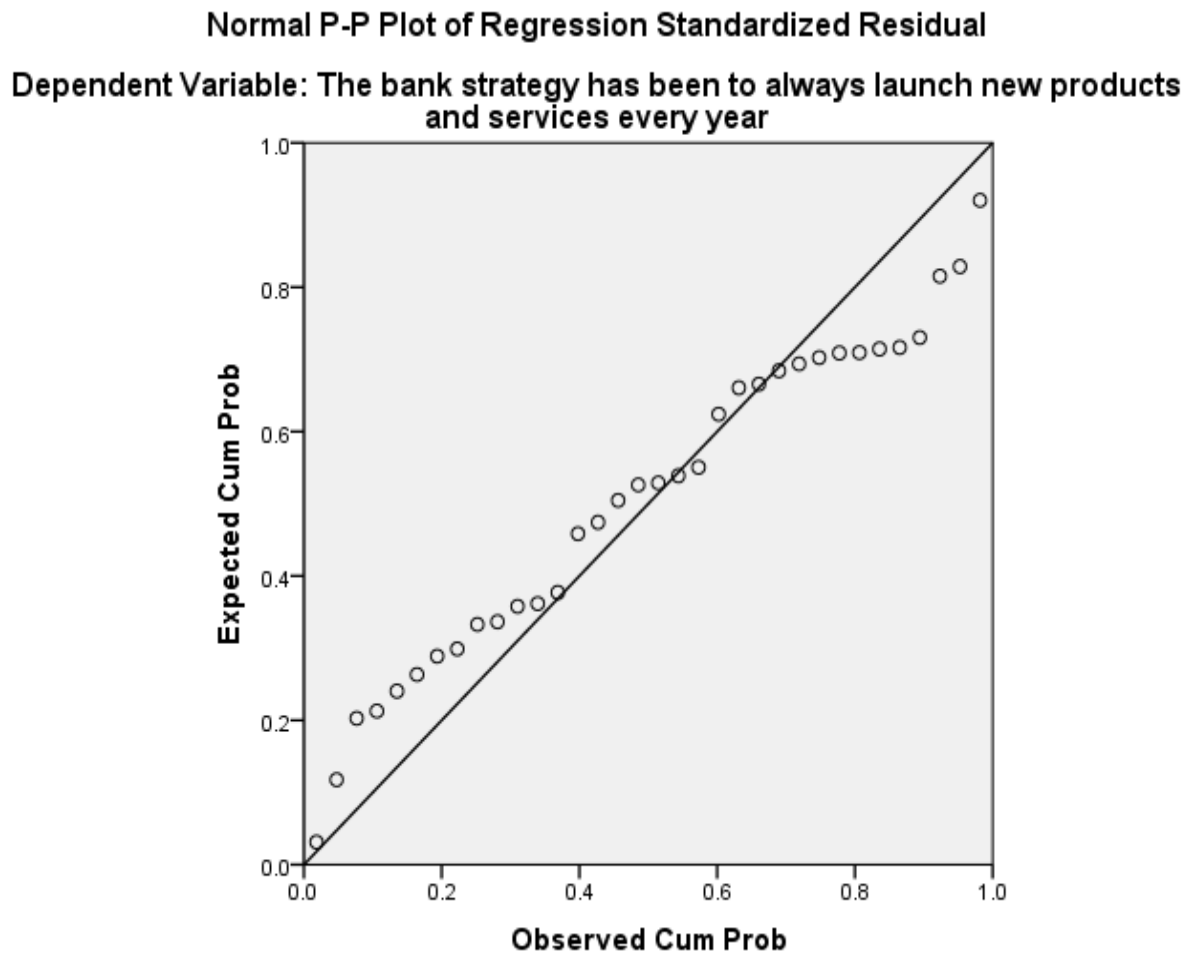
Source: Research data (2019)

## **4.4 Diagnostic Tests**

### **4.4.1 Normality Test**

The researcher used the P-P plot to establish whether the data sets were normally distributed. According to Norusis (2006), for valid references to be made from the regression analysis, the data sets of the regression are expected to follow a normal distribution. The results were satisfactory as indicated in figure 4.5 below:

**Figure 4.5: Normality Test**



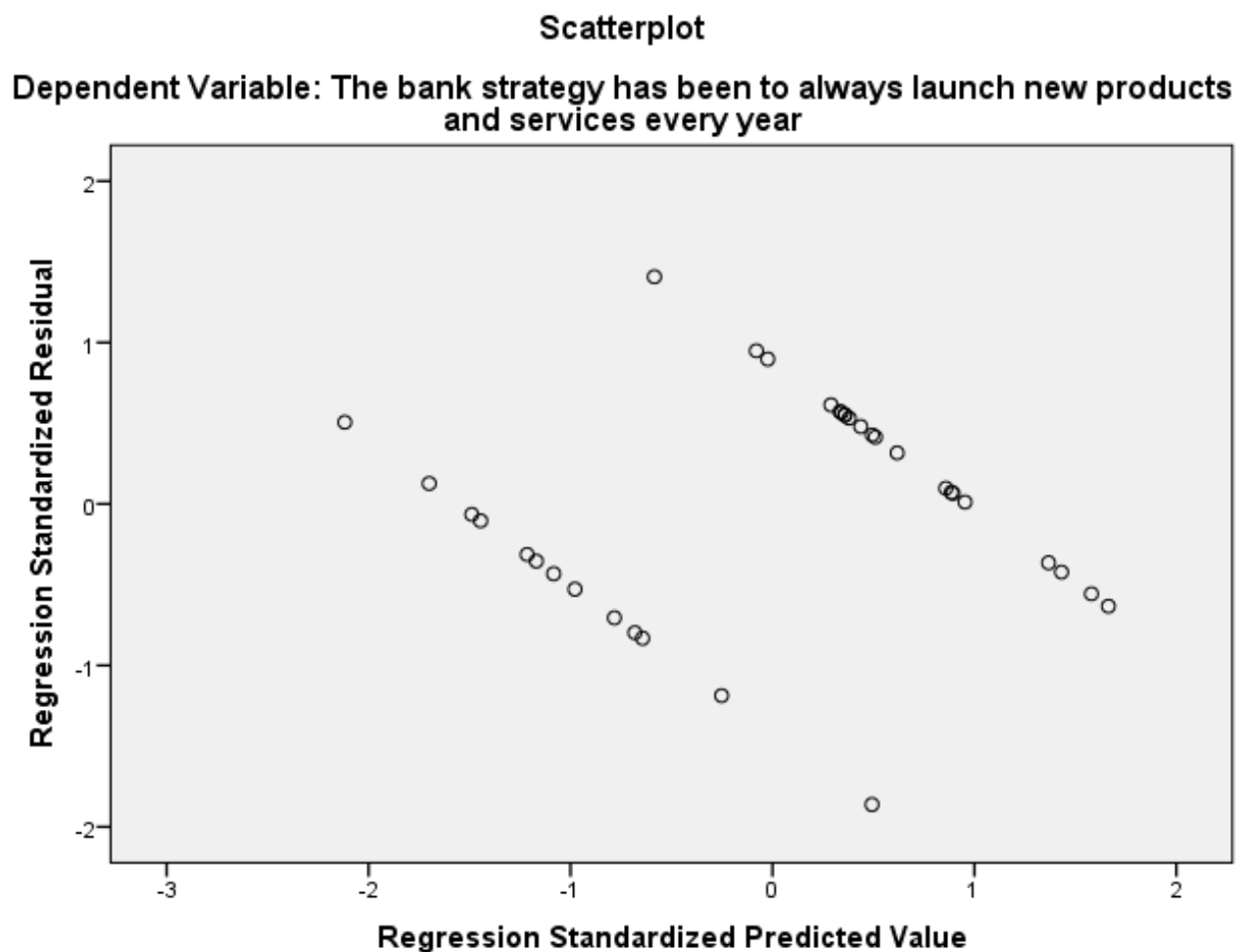
Source: Research data (2019)

#### **4.4.2 Heteroscedasticity Test**

The researcher conducted a heteroscedasticity test to establish whether modelling errors are uncorrelated or normally distributed. A scatter plot was used to establish if the sequence of the random variables is heteroscedastic and if all random variables in the sequence have the same finite variance or heteroscedasticity. The study established that there was no heteroscedasticity in the data set since from the scatter plot below, there are points that are distributed equally below and above zero on the X axis, as well as to the right and left of the point zero on the Y axis. This

is an indication that the residuals are homoscedastic, and hence, there was no heteroscedasticity in the data. Since the target population of the study was small and owing to the fact that the researcher discovered some missing data. Lack of heteroscedasticity in the data was supported by the words of Norušis, M. J. (2006) who stated that some of the reasons why data may lack heteroscedasticity include small target population and failure of some respondents in the study to answer all the questions. The results of the heteroscedasticity test are shown in figure 4.6 below:

**Figure 4.6: Heteroscedasticity Test**



Source: Research data (2019)

#### 4.4.3 Multicollinearity Test

The researcher carried out a multicollinearity test to determine whether or not there was similarity between the independent variables. According to Al-Benna et al. (2010), when there are similarities among the predictors, there is most likely be a very strong correlation. They further state that the decision rule on the absence or presence of multicollinearity is as follows:

If VIF value  $0 > 1 \leq 10$ , or lies between 1 and 10, no multicollinearity

If VIF value is  $< 1$ , or  $> 10$ , there is multicollinearity

Therefore, from table 4.3 below the study established that there was no multicollinearity in the data, since all the values of VIF were between 1 and 10.

**Table 4.3: Coefficient**

| Model                                                                                                                                                                                                                                                           | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. | Collinearity Statistics |       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------|---------------------------|--------|------|-------------------------|-------|
|                                                                                                                                                                                                                                                                 | B                           | Std. Error | Beta                      |        |      | Tolerance               | VIF   |
| 1 (Constant)                                                                                                                                                                                                                                                    | .090                        | .525       |                           | .172   | .865 |                         |       |
| The bank values relationships with various stakeholders such as Safaricom, ICT firms, and other firms for the purpose of innovation.                                                                                                                            | .239                        | .190       | .230                      | 1.258  | .222 | .614                    | 1.630 |
| The bank values its relationship with various stakeholders and considers their needs in an effort to satisfy them.                                                                                                                                              | .117                        | .145       | .142                      | .810   | .427 | .669                    | 1.494 |
| The bank develops external networks with specialist knowledge.                                                                                                                                                                                                  | .276                        | .170       | .286                      | 1.628  | .118 | .666                    | 1.502 |
| Staff work well together across departmental boundaries                                                                                                                                                                                                         | .011                        | .143       | .017                      | .079   | .937 | .431                    | 2.318 |
| The bank organization structure supports effective and rapid decision making by all staff                                                                                                                                                                       | -.207                       | .129       | -.288                     | -1.608 | .123 | .641                    | 1.559 |
| Staff work in well-coordinated teams                                                                                                                                                                                                                            | .096                        | .135       | .139                      | .713   | .484 | .540                    | 1.853 |
| The bank has a supportive climate for new ideas from all staff.                                                                                                                                                                                                 | .115                        | .114       | .190                      | 1.013  | .323 | .583                    | 1.717 |
| There are well laid down systems through which the bank acquires, processes store and applies new knowledge.                                                                                                                                                    | .093                        | .179       | .094                      | .518   | .610 | .627                    | 1.596 |
| New knowledge acquired from other financial institutions and firms is shared within the organization and considered for innovation of new products and services                                                                                                 | -.113                       | .139       | -.167                     | -.808  | .428 | .484                    | 2.067 |
| Training and development and mentorship of staff is part of our strategy for innovation.                                                                                                                                                                        | .361                        | .172       | .521                      | 2.100  | .048 | .335                    | 2.987 |
| The bank evaluates its strategies over time to identify knowledge gaps and formulates key strategies to be adopted                                                                                                                                              | -.071                       | .216       | -.070                     | -.329  | .745 | .450                    | 2.223 |
| The bank applies Knowledge Management initiatives in sharing information within and with external stakeholders such as communities of practice, knowledge portals such as websites and share points, best practice, peer assist, knowledge centers among others | -.106                       | .175       | -.118                     | -.604  | .553 | .541                    | 1.848 |

Source: Research data (2019)

## 4.5 Descriptive Analysis of Variables

The researcher conducted descriptive analysis to establish the extend of agreement of respondents to statements selected on the influence of firm internal environment on the innovative capacity of commercial banks in Kenya. Respondents were asked to indicate the level of their agreement on each statement using the following Likert scale: *Strongly agree* = 1: *agree* = 2: *Neutral* = 3: *Disagree* = 4: *Strongly Disagree*.

### 4.5.1 Influence of Firm Networks on the Innovative Capacity of Commercial Banks in Kenya

The findings in table 4.4 below indicate that almost all banks values relationships with various stakeholders for the purpose of innovation with a mean of 1.69 and a standard deviation of 0.468. Respondents also indicated that banks too value relationship with stake holders in an effort to satisfy them with a mean of 1.67 and a standard deviation of 0.577. In the study, it was evident from the response given that almost all banks collaborate with universities and other R&D units to accumulate more knowledge with a mean of 1.77 and a standard deviation of 0.667. Respondents indicated that banks develop external knowledge networks with knowledge experts to facilitate innovation with a mean of 1.74 and a standard deviation of 0.498. Also, banks have close working relationships with national and educational institutions to help develop skills with a mean of 1.85 and a standard deviation of 0.709

These results, therefore, mean that the banks have tried to strengthen their networks by maintaining strong relationships with stakeholders by engaging them as often as is necessary. The study findings above are supported by Whelan (2016) who states that most work in organizations gets done through employee informal networks and Najafi-Tavani, et al. (2018) who argue that collaborative networks with stakeholders improve new product performance through development of new products, services and processes.

**Table 4.4: Firm Networks**

|                                                                                                                                                  | Mean | Std. Deviation |
|--------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------|
| The bank values relationships with various stakeholders such as Safaricom, ICT firms, and other firms for the purpose of innovation.             | 1.69 | .468           |
| The bank values its relationship with various stakeholders and considers their needs in an effort to satisfy them.                               | 1.67 | .577           |
| There is collaboration with universities and other R&D units and other innovative institutions towards development of the bank's knowledge base. | 1.77 | .667           |
| The bank develops external networks with specialist knowledge.                                                                                   | 1.74 | .498           |
| The bank works closely with the local and national education institutions towards skills development.                                            | 1.85 | .709           |

Source: Research data (2019)

#### **4.5.2 Influence of Human Capital on the Innovative Capacity of Commercial Banks in**

##### **Kenya**

In table 4.5 below, it was evident from the respondent's feedback that staff in banks work together across department with a mean of 1.79 and a Standard Deviation of 0.741. Respondents too indicated that the management involves staff in suggesting ideas for improvement in the innovation process with a mean of 1.90 and a standard deviation of 0.384. The organization structure of banks supports decision making by staff as indicated by respondents with a mean of 1.92 and a standard deviation of 0.774. Many respondents were in agreement with the statements that banks have open communication from top-down, bottom-up and across the organization with a mean and standard deviation of 2.05 and 0.887, staff work in well-coordinated teams with a mean and standard deviation of 2.14 and 0.787, banks have a supportive climate for generation of new ideas with a mean and standard deviation of 2.05 and 0.793. Finally, respondents agreed with the statement that banks have good reward and recognition systems which support innovation with a mean and standard deviation of 2.11 and 0.689. The above findings are supported by the statement of Hacker et al. (2017) who states that employee participation in work processes is the pillar of the formation of firm innovative networks since they possess tacit knowledge which is the most vital innovation ingredient.

**Table 4.5: Human Capital**

|                                                                                                             | <b>Mean</b> | <b>Std. Deviation</b> |
|-------------------------------------------------------------------------------------------------------------|-------------|-----------------------|
| Staff work well together across departmental boundaries                                                     | 1.79        | .732                  |
| Staff are fully involved in suggesting ideas for improvement to products, processes services and procedures | 1.90        | .384                  |
| The bank organization structure supports effective and rapid decision making by all staff                   | 1.92        | .774                  |
| We have open communication within the bank from top-down, bottom-up and across the organization             | 2.05        | .887                  |
| Staff work in well-coordinated teams                                                                        | 2.1         | .894                  |
| The bank has a supportive climate for new ideas from all staff.                                             | 2.05        | .793                  |
| The bank's reward and recognition systems support innovation                                                | 2.11        | .680                  |
|                                                                                                             |             |                       |

Source: Research data (2019).

### **4.5.3 Influence of Firm Absorptive Capacity on the Innovative Capacity of Commercial**

#### **Banks in Kenya**

From table 4.6 below, respondents in the study agreed that banks had well laid down systems through which the bank acquires, processes store and applies new knowledge with a mean of 1.92 and a standard deviation of 0.587. Banks too have well established divisions which specializes in innovation of new products and services as evident with a mean of 2.00 and a standard deviation of 0.615. Respondents agreed that new knowledge acquired from other financial institutions and firms is shared within the organization and utilized for innovation with a mean of 1.81 and a standard deviation of 0.701. Banks apply training and development of staff as an innovation strategy as indicated by respondents with a mean of 2.11 and a standard deviation of 0.764. Evaluation of bank strategies over time to identify knowledge gaps and formulate new key strategies was supported by respondents with a mean of 1.95 and a standard deviation of 0.613. It was also evident that banks apply Knowledge Management initiatives in sharing information within and with external stakeholders with a mean of 2.05 and a standard deviation of 0.567. These findings are strongly supported by Ndiengue, Herselman & Flowerday, (2012) who argue that AC acts as a link between external knowledge, firm

performance and the innovative capacity of firms by discovering and integrating new opportunities with existing knowledge.

**Table 4.6: Firm Absorptive Capacity**

|                                                                                                                                                                                                                                                                 | Mean | Std. Deviation |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------|
| There are well laid down systems through which the bank acquires, processes store and applies new knowledge.                                                                                                                                                    | 1.92 | .587           |
| The bank has well established divisions which specializes in innovation of new products and services.                                                                                                                                                           | 2.00 | .628           |
| New knowledge acquired from other financial institutions and firms is shared within the organization and considered for innovation of new products and services                                                                                                 | 1.81 | .732           |
| Training and development and mentorship of staff is part of our strategy for innovation.                                                                                                                                                                        | 2.11 | .767           |
| The bank evaluates its strategies over time to identify knowledge gaps and formulates key strategies to be adopted                                                                                                                                              | 1.95 | .613           |
| The bank applies Knowledge Management initiatives in sharing information within and with external stakeholders such as communities of practice, knowledge portals such as websites and share points, best practice, peer assist, knowledge centers among others | 2.05 | .580           |

Source: Research data (2019)

#### **4.5.4 Innovative Capacity of Commercial Banks in Kenya**

In table 4.7 below, respondents agreed that banks have always had a strategy to launch new products and services every year with a mean of 1.66 and a standard deviation of 0.481. That new processes and procedures have improved service delivery to clients was evident with a mean of 1.61 and a standard deviation of 0.495. Respondents in the study also agreed that the brand images of their banks have improved overtime with a mean of 1.71 and a standard deviation of 0.547. They also agreed that the profit margin of banks have grown over the last five years with a mean of 1.61 and a standard deviation of 0.565. Steady growth in bank revenue due to innovation of new products and services was evident in the study with a mean of 1.61 and a standard deviation of 0.495. Finally, respondents in the study agreed to the statement that the bank releases at least two new products or services in the market each year with a mean of 1.74 and a standard deviation of 0.644. The findings are similar to those of Cropley & Cropley (2017) who opines that the ability to continuously innovate is essential for organizational

performance since creativity and innovation are the main pillars of competent economies. They also agree with the statement of Kuczmarski, (2003) who states that many benefits accrue from embracing an innovative culture and making innovation a core function in a firm's "to do" list.

**Table 4.7: Innovative Capacity of Commercial Banks**

|                                                                                   | Mean | Std. Deviation |
|-----------------------------------------------------------------------------------|------|----------------|
| The bank strategy has been to always launch new products and services every year  | 1.66 | .481           |
| New processes and procedures have improved service delivery to clients            | 1.61 | .495           |
| The brand image of the bank has improved overtime.                                | 1.71 | .565           |
| The bank's profit margins over the last 5 years have grown                        | 1.61 | .547           |
| There has been a steady growth in revenue arising from new products and services. | 1.61 | .495           |
| The bank releases at least 2 new products or services to the market every year.   | 1.74 | .644           |

Source: Research data (2019).

#### 4.6. Regression Analysis

According to Maravelakis (2019), regression analysis is conducted to determine whether there is relation between variables, to identify the strength of the relationships and finally to conclude a regression equation used to describe the relationship. The scholar explains that whenever regression analysis is conducted in SPSS, it yields three results namely: The model summary, ANOVA and Coefficients. The quality of prediction by a regression model determines how reliable the findings of the study are and how good the model is. The values of R and R square are used to determine the goodness of the model, and the higher the values are, the better the model. He then concludes that the coefficients in regression analysis shows the individual predictors, their statistical significance, and the nature of the relation between the predictors with the dependent variable which is determined by the Sig. value, while the beta value shows the direction of the relation (whether positive or negative).

The researcher carried out regression analysis for all the three independent variables to determine their model summary, to test their hypotheses and to determine their regression

coefficients. The results of the regression are indicated in various segments below. The hypotheses were all stated as null hypothesis, and as such, the decision rule was also based on null hypothesis as follows:

If  $\text{sig} > 0.05$ , then null hypothesis is supported

If  $\text{sig} \leq 0.05$ , then alternative hypothesis is supported

Analysis was done at 95% confidence level.

#### **4.6.1 Regression Analysis for the Influence of Firm Networks on the Innovative Capacity of Commercial Banks in Kenya**

##### **4.6.1.1 Model Summary**

The researcher carried out regression analysis on the Independent Variable Firm Networks and as indicated in table 4.8 below and established that the value of R was 0.531, an indication that there is a fairly strong correlation between the dependent variable (Innovative capacity of Commercial banks in Kenya) and the independent variable (firm Networks). The value of R square value was 0.282, an indication that the independent variable accounted for 28.2% of the outcome of the dependent variable thus the model was found to be fairly good.

**Table 4.8: Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | .531 <sup>a</sup> | .282     | .170              | .438                       |

a. Predictors: (Constant), The bank works closely with the local and national education institutions towards skills development. The bank values relationships with various stakeholders for the purpose of innovation. The bank values its relationship with various stakeholders and considers their needs in an effort to satisfy them., The bank develops external networks with specialist knowledge., There is collaboration with universities and other R&D units and other innovative institutions towards development of the bank's knowledge base.

b. Dependent Variable: innovative capacity of commercial banks

Source: Research data (2019)

#### 4.6.1.2 Testing of Hypotheses

**Hypothesis 1: *Firm networks do not influence the innovative capacity of Commercial banks in Kenya.***

The researcher tested hypothesis 1 above for the independent variable firm networks using ANOVA based on the decision rule stated above, and as per the results indicated in table 4.9 below, the P value was =0.05 which is statistically significant. Therefore, the null hypothesis was rejected and the alternative hypothesis “*Firm networks influence the innovative capacity of Commercial banks in Kenya,*” was accepted.

**Table 4.9: ANOVA**

| Model |            | Sum of Squares | Df | Mean Square | F     | Sig. |
|-------|------------|----------------|----|-------------|-------|------|
| 1     | Regression | 2.414          | 5  | .483        | 2.517 | .050 |
|       | Residual   | 6.138          | 32 | .192        |       |      |
|       | Total      | 8.553          | 37 |             |       |      |

a. Dependent Variable: innovative capacity of commercial banks

b. Predictors: (Constant), The bank works closely with the local and national education institutions towards skills development. The bank values relationships with various stakeholders for the purpose of innovation. The bank values its relationship with various stakeholders and considers their needs in an effort to satisfy them. The bank develops external networks with specialist knowledge. There is collaboration with universities and other R&D units and other innovative institutions towards development of the bank's knowledge base.

Source: Research data (2019)

#### 4.6.1.3 Regression Coefficients

From the regression analysis of the Variable Firm Networks, the coefficient results as indicated in the table 4.10 below show that only one predictor; “*The bank values relationships with various stakeholders such as Safaricom, ICT firms, and other firms for the purpose of innovation....*” showed a positive statistically significant relationship with the outcome variable (Beta =0.416, sig =0.014). All the other predictors did not show statistical significance.

**Table 4.10: Regression Coefficients**

| Model |                                                                                                                                                  | Unstandardized Coefficients |            | Standardized Coefficients | T     | Sig. |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------|---------------------------|-------|------|
|       |                                                                                                                                                  | B                           | Std. Error | Beta                      |       |      |
| 1     | (Constant)                                                                                                                                       | .335                        | .429       |                           | .781  | .441 |
|       | The bank values relationships with various stakeholders such as Safaricom, ICT firms, and other firms for the purpose of innovation.             | .416                        | .160       | .407                      | 2.606 | .014 |
|       | The bank values its relationship with various stakeholders and considers their needs in an effort to satisfy them.                               | .105                        | .129       | .128                      | .819  | .419 |
|       | There is collaboration with universities and other R&D units and other innovative institutions towards development of the bank's knowledge base. | .032                        | .121       | .043                      | .266  | .792 |
|       | The bank develops external networks with specialist knowledge.                                                                                   | .171                        | .153       | .179                      | 1.116 | .273 |
|       | The bank works closely with the local and national education institutions towards skills development.                                            | .053                        | .127       | .069                      | .418  | .679 |

a. Dependent Variable: innovative capacity of commercial banks

Source: Research data 2019

The regression equation was as follows:

$$Y=0.335+0.416X_1+0.105X_2+0.032X_3+0.171X_4+0.053X_5$$

Where  $X_1 \dots X_5$  = Variable statements

#### **4.6.2 Regression Analysis for the Influence of Human Capital on the Innovative Capacity of Commercial Banks in Kenya.**

##### **4.6.2.1 Model Summary**

The researcher carried out regression analysis for the variable Human capital and as indicated in the table below, the value of R was 0.666, an indication that there is a strong correlation between the dependent variable (innovative capacity of commercial banks in Kenya) and the independent variable (human Capital). The value of R square was 0.444, an indication that the independent variables accounted for 44.4% of the outcome of the depended variable. This therefore was a good model as presented in table 4.11 below

**Table 4.11: Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | .666 <sup>a</sup> | .444     | .300              | .410                       |

a. Predictors: (Constant), The bank's reward and recognition systems support innovation, Staff work well together across departmental boundaries, Staff are fully involved in suggesting ideas for improvement to products, processes services and procedures, Staff work in well-coordinated teams , The bank organization structure supports effective and rapid decision making by all staff, The bank has a supportive climate for new ideas from all staff., We have open communication within the bank from top-down, bottom-up and across the organization

b. dependent Variable: innovative capacity of commercial banks

Source: Research data (2019)

#### 4.6.2.2 Testing Hypothesis

**Hypothesis 2:  $H_0$  Human capital does not influence the innovative capacity of Commercial banks in Kenya.**

The researcher tested hypothesis 2 above for the independent variable human capital using ANOVA. Based on the decision rule stated above and as per the results indicated in table 4.12 below, the P value =0.016, which is <0.05 and thus statistically significant. Therefore, the null hypothesis was rejected and the alternative hypothesis “*Human capital influences the innovative capacity Commercial banks in Kenya.*” was accepted.

**Table 4.12: ANOVA**

| Model |            | Sum of Squares | Df | Mean Square | F     | Sig. |
|-------|------------|----------------|----|-------------|-------|------|
| 1     | Regression | 3.629          | 7  | .518        | 3.082 | .016 |
|       | Residual   | 4.542          | 27 | .168        |       |      |
|       | Total      | 8.171          | 34 |             |       |      |

a. Dependent Variable: innovative capacity of commercial banks  
Predictors: (Constant), The bank's reward and recognition systems support innovation, Staff work well together across departmental boundaries, Staff are fully involved in suggesting ideas for improvement to products, processes services and procedures, Staff work in well-coordinated teams , The bank organization structure supports effective and rapid decision making by all staff, The bank has a supportive climate for new ideas from all staff., We have open communication within the bank from top-down, bottom-up and across the organization  
Source: Research data (2019)

#### 4.6.2.3 Regression Coefficients

From the regression analysis of the Variable Human capital, the coefficient results as indicated in table 4.13 below indicate that only two predictors; “...*Staff work well together across departmental boundaries ....*” and “*We have open communication within the bank from top-*

*down, bottom-up and across the organization.*” showed statistically significant relationships with the outcome variable with Beta =0.378, sig =0.04), and Beta =-0.281 and sig =0.027 respectively. The rest of the predictors did not show statistical significance.

**Table 4.13: Regression Coefficients**

|   | Model                                                                                                       | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. |
|---|-------------------------------------------------------------------------------------------------------------|-----------------------------|------------|---------------------------|--------|------|
|   |                                                                                                             | B                           | Std. Error | Beta                      |        |      |
| 1 | (Constant)                                                                                                  | 1.028                       | .416       |                           | 2.470  | .020 |
|   | Staff work well together across departmental boundaries                                                     | .378                        | .120       | .571                      | 3.151  | .004 |
|   | Staff are fully involved in suggesting ideas for improvement to products, processes services and procedures | -.192                       | .188       | -.158                     | -1.021 | .316 |
|   | The bank organization structure supports effective and rapid decision making by all staff                   | -.161                       | .119       | -.222                     | -1.349 | .189 |
|   | We have open communication within the bank from top-down, bottom-up and across the organization             | -.281                       | .120       | -.492                     | -2.334 | .027 |
|   | Staff work in well-coordinated teams                                                                        | .178                        | .114       | .263                      | 1.560  | .131 |
|   | The bank has a supportive climate for new ideas from all staff.                                             | .181                        | .112       | .297                      | 1.621  | .117 |
|   | The bank’s reward and recognition systems support innovation                                                | .208                        | .133       | .262                      | 1.562  | .130 |

a. Dependent Variable: innovative capacity of commercial banks

Source: Research data 2019

The regression equation was therefore:

$$Y=1.028+0.378X_1+-.192X_2+-.161X_3+-.281X_4+.178X_5+.181X_6+.208X_7$$

Where X1.....X7 = Variable statements

### **4.6.3 Regression Analysis for the Influence of Firm Absorptive Capacity on the Innovative Capacity of Commercial Banks in Kenya**

#### **4.6.3.1 Model Summary**

The researcher carried out regression analysis as indicated in table 4.14 below, the value of R was 0.635, an indication that there is a strong correlation between the dependent variable and the independent variable. The value of R square is 0.403, an indication that the independent

variables account for 40.3% of the outcome of the dependent variable. Thus, the model was good.

**Table 4.14: Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | .635 <sup>a</sup> | .403     | .284              | .410                       |

a. Predictors: (Constant), The bank applies Knowledge Management initiatives in sharing information within and with external stakeholders such as communities of practice, knowledge portals such as websites and share points, best practice, peer assist, knowledge centers among others, The bank evaluates its strategies over time to identify knowledge gaps and formulates key strategies to be adopted , The bank has well established divisions which specializes in innovation of new products and services., New knowledge acquired from other financial institutions and firms is shared within the organization and considered for innovation of new products and services, There are well laid down systems through which the bank acquires, processes store and applies new knowledge., Training and development and mentorship of staff is part of our strategy for innovation.

b. Dependent Variable: The bank strategy has been to always launch new products and services every year

Source: Research data (2019)

#### 4.6.3.2 Testing Hypothesis

**Hypothesis 3:  $H_0$  Absorptive capacity does not influence the innovative capacity of Commercial banks in Kenya.**

The researcher tested hypothesis 3 above for the independent variable firm absorptive capacity using ANOVA. Based on the decision rule stated above and as per the results indicated in table 4.15 below, the P value = 0.012, which is <0.05 was statistically significant. Therefore, the null hypothesis was rejected and the alternative hypothesis “Firm absorptive capacity influences the innovative capacity of Commercial banks in Kenya” was accepted.

**Table 4.15: ANOVA**

| Model |            | Sum of Squares | df | Mean Square | F     | Sig. |
|-------|------------|----------------|----|-------------|-------|------|
| 1     | Regression | 3.399          | 6  | .567        | 3.377 | .012 |
|       | Residual   | 5.033          | 30 | .168        |       |      |
|       | Total      | 8.432          | 36 |             |       |      |

a. Dependent Variable: Innovative capacity of commercial banks

b. Predictors: (Constant), The bank applies Knowledge Management initiatives in sharing information within and with external stakeholders such as communities of practice, knowledge portals such as websites and share points, best practice, peer assist, knowledge centers among others, The bank evaluates its strategies over time to identify knowledge gaps and formulates key strategies to be adopted , The bank has well established divisions which specializes in innovation of new products and services., New knowledge acquired from other financial institutions and firms is shared within the organization and considered for innovation of new products and services, There are well laid down systems through which the bank acquires, processes store and applies new knowledge., Training and development and mentorship of staff is part of our strategy for innovation.

Source: Research data (2019)

#### 4.6.3.3 Regression Coefficients

From the regression analysis of the Variable Firm Absorptive capacity as indicated in table

4.16 below, the coefficient results indicated that none of the predictors showed statistical significance since all of the predictors had a P value of >0.05.

**Table 4.16: Regression Coefficients**

| Model                                                                                                                                                                                                                                                           | Unstandardized Coefficients |            | Standardized Coefficients | t     | Sig. |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------|---------------------------|-------|------|
|                                                                                                                                                                                                                                                                 | B                           | Std. Error | Beta                      |       |      |
| 1 (Constant)                                                                                                                                                                                                                                                    | .403                        | .338       |                           | 1.193 | .242 |
| There are well laid down systems through which the bank acquires, processes store and applies new knowledge.                                                                                                                                                    | .167                        | .140       | .206                      | 1.198 | .240 |
| The bank has well established divisions which specializes in innovation of new products and services.                                                                                                                                                           | .214                        | .125       | .276                      | 1.717 | .096 |
| New knowledge acquired from other financial institutions and firms is shared within the organization and considered for innovation of new products and services                                                                                                 | -.017                       | .112       | -.024                     | -.151 | .881 |
| Training and development and mentorship of staff is part of our strategy for innovation.                                                                                                                                                                        | .268                        | .135       | .416                      | 1.988 | .056 |
| The bank evaluates its strategies over time to identify knowledge gaps and formulates key strategies to be adopted                                                                                                                                              | -.010                       | .149       | -.012                     | -.065 | .949 |
| The bank applies Knowledge Management initiatives in sharing information within and with external stakeholders such as communities of practice, knowledge portals such as websites and share points, best practice, peer assist, knowledge centers among others | -.013                       | .156       | -.015                     | -.083 | .934 |

a. Dependent Variable: Innovative capacity of commercial Banks

Source: Research data (2019)

The regression equation was therefore:

$$Y = 0.403 + 0.167X_1 + 0.214X_2 - 0.017X_3 + 0.268X_4 - 0.010X_5 - 0.013X_6$$

Where  $X_1 \dots X_6$  = Variable statements

#### 4.7. Regression model summary

The researcher carried out regression analysis to determine the combined effect of the independent variables (Firm networks, Human capital and Firm absorptive capacity) on the dependent variable (the innovative capacity of commercial banks in Kenya). The findings of the model summary, ANOVA and Regression Coefficients are shown in table 4.17 below:

##### 4.7.1. Model summary

The findings of coefficient of correlation R and adjusted coefficient of determination R squared are indicated in table 4.17 below:

**Table 4.17: Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | .751 <sup>a</sup> | .565     | .527              | .31155                     |

a. Predictors: (Constant), firm absorptive capacity, human capital, firm network

b. dependent variable: innovative capacity

From 4.17 above, the coefficient of correlation R was 0.751, an indication that the variables were highly correlated. The value of adjusted  $R^2$  was 0.527, an indication that the independent variables accounted for 52.7% outcome of the independent variable.

#### ANOVA

The researcher tested hypotheses for the 3 independent variables (firm networks, human capital and Firm absorptive capacity) using ANOVA. The results of the combined effect are indicated in table 4.18 below, the P value = 0.000, which is  $< 0.05$  and thus statistically significant.

Therefore, the null hypothesis for all the three variables were rejected and the alternative hypotheses accepted.

**Table 4.18: ANOVA**

| Model |            | Sum of Squares | df | Mean Square | F      | Sig.              |
|-------|------------|----------------|----|-------------|--------|-------------------|
| 1     | Regression | 4.408          | 3  | 1.469       | 15.137 | .000 <sup>b</sup> |
|       | Residual   | 3.397          | 35 | .097        |        |                   |
|       | Total      | 7.805          | 38 |             |        |                   |

Source: Research Data (2019)

a. Dependent Variable: innovative capacity

b. Predictors: (Constant), firm absorptive capacity, human capital, firm network.

### Regression coefficient

To determine the individual influence of the independent variables on the dependent variable, their coefficients were generated as indicated in table 4.19 below:

**Table 4.19: Regression Coefficient**

| Model |                          | Unstandardized Coefficients |            | Standardized Coefficients | t     | Sig. |
|-------|--------------------------|-----------------------------|------------|---------------------------|-------|------|
|       |                          | B                           | Std. Error | Beta                      |       |      |
| 1     | (Constant)               | -.292                       | .372       |                           | -.785 | .438 |
|       | Firm network             | .676                        | .156       | .498                      | 4.328 | .000 |
|       | Human capital            | .435                        | .108       | .461                      | 4.018 | .000 |
|       | Firm absorptive capacity | .094                        | .065       | .162                      | 1.440 | .159 |

a. Dependent Variable: innovative capacity

Where Y= the innovative capacity of commercial banks in Kenya

X1= Firm Networks

X2= Human Capital

X3= Firm absorptive capacity

The findings show that while holding other factors constant, innovative capacity of commercial banks in Kenya would be at -0.292. A unit increase in firm networks while holding other factors

constant, innovative capacity of commercial banks in Kenya would be at 0.676. A unit increase in human capital while holding other factors constant innovative capacity of commercial banks in Kenya would be at 0.435. A unit increase in firm absorptive capacity while holding other factors constant, innovative capacity of commercial banks in Kenya would be at 0.094.

The findings pointed out that firm Networks had a P value of 0.00 which is less than 0.05, an indication that the variable significantly influences the innovative capacity of commercial banks in Kenya. These findings are similar to a study carried out by Dagnino et al. 2015 who states that Interorganizational networks impacts greatly on innovation within the firm.

The findings pointed out that human capital had a P value of 0.00 which is less than 0.05, an indication that the variable significantly influences the innovative capacity of commercial banks in Kenya. This is supported by the words of Hacker et al. 2017 who states that Employee participation is the pillar of the formation of firm innovative networks since they possess tacit knowledge which is the most vital innovation ingredient.

The findings pointed out that firm absorptive capacity had a P value of 0.159 which is greater than 0.05, an indication that the variable does not significantly influence the innovative capacity of commercial banks in Kenya. These findings are similar to those of Ndiengue, Herselman, (2014) who states that most firms have low absorptive capacity due to lack of collaboration with other firms and also because firm managers have very little knowledge on the value of firm absorptive capacity to innovation.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1. Introduction

This chapter presents the summary of the findings on the study, conclusion and recommendations which are based on the findings. It also provides recommendations for further studies to close the research gap which the researcher feels should be filled by further research.

#### 5.2. Summary of Findings

The main objective of the study was to establish the influence of firm internal environment on the innovative capacity of commercial banks in Kenya. The study was guided by the following research questions; what is the influence of Firm Networks on the innovative capacity of commercial banks in Kenya? What is the influence of human capital on the innovative capacity of commercial banks in Kenya? What is the influence of firm absorptive capacity on the innovative capacity of commercial banks in Kenya?

The finding indicated that the data was suitable for regressing. The regression analysis established that for the variable 'firm networks' the coefficient of correlation  $R$  was 0.531, indicating that the variables were highly correlated. Adjusted  $R^2$  was 0.282 (28.2%), an indication that variations in the Dependent variable innovative capacity of commercial banks in Kenya was influenced by the independent variable firm networks. For the variable Human Capital, the coefficient of correlation  $R$  was 0.666, indicating that the variables were highly correlated. Adjusted  $R^2$  was 0.444 (44.4%), an indication that variations in the Dependent variable innovative capacity of commercial banks in Kenya was influenced by the independent variable human capital. And finally, for the variable Firm absorptive capacity, the coefficient of correlation  $R$  was 0.635, an indication that the variables were highly correlated. Adjusted  $R^2$

was 0.284 (28.4%), indicating that variations in the Dependent variable innovative capacity of commercial banks in Kenya) was influenced by the independent variable (firm absorptive capacity).

#### **5.2.1. Findings on the Influence of Firm Networks on the Innovative Capacity of Commercial Banks in Kenya**

The study established that good relationship with stakeholder created through networking had a positive influence on innovation. Understanding stakeholder needs with the aim of offering satisfactory service also helps in facilitating innovation since user needs are well clarified thus more effort is put in through innovation of new products, services, processes and procedures. Collaboration with universities and other research units helps in creating new knowledge for innovation. Engaging knowledge experts through external networks lead to increase in the banks knowledge base thus bringing forth new innovations. Close collaboration with national education institutions helps in acquisition of new knowledge that is used to innovate new products and services. This was in agreement with Whelan, (2016) who argues that most work in organizations gets done through employee informal networks and D'Andreta, et al. (2016) who states that Efforts to improve innovation through firm networks are on the rise in both service and manufacturing firms

#### **5.2.2. Findings on the Influence of Human Capital on the Innovative Capacity of Commercial Banks in Kenya**

From the study, it was established that working together across departmental boundaries and in well-coordinated teams within the organization has a strong influence on innovation as supported by Wadell, Björk, & Magnusson, (2014) who argue that team formation in firms helps in exploring and exploiting personal ideas among workers. From the study, it was evident that the involvement of staff in suggesting ideas for improvement to products, processes services and procedures and organization structures that support effective and rapid decision

making by all staff impact greatly on the innovative capacity of commercial banks as earlier argued by Akesson, et al. (2016) who states that It is vital to ensure that all employees are involved in the innovation process from initiation to launch and Sadegh, Sharifirad & Ataei, 2012 who state that a good organizational structure is a critical driver of efficiency through innovation in firms.

It was also established in the study that open communication within the bank from top-down, bottom-up and across the organization helped to facilitate creation and sharing of innovative ideas, however, some respondents reiterated that communication in the banking industry was poor as supported by Whelan's, (2016) statement that communication is poor in firms without well-defined structures on how information should flow. Most respondents opined that the reward and recognition systems in their banks motivated employees to work extra ordinarily towards innovation of new products and services. This was supported in the literature review by Cheruiyot, (2012) who observed that reward and recognition of employees is critical in determining the innovative capacity of firms in the manufacturing industry and Sadegh, Sharifirad & Ataei, (2012) who argued that reward and recognition are vital to motivate employees to share information.

### **5.2.3. Findings on the Influence of Firm Absorptive Capacity on the Innovative Capacity of Commercial Banks in Kenya**

Respondents in the study agreed that their respective banks had well laid down systems through which they acquire, processes store and apply new knowledge to facilitate new innovations as argued by Tsai (2001) who state that there has to be proper systems to facilitate access to new knowledge. It was also evident in the study that most banks have well established divisions which specialize in innovation of new products and services. This was supported by Banu (2018) who argued that key people, defined timeframes proper planning and effective decision making are key indicators for successful innovation. From the study, most of the respondents

agreed that new knowledge acquired from other firms is shared within the organization and utilized for innovation of new products and services and that their respective banks apply Knowledge Management initiatives in sharing information within and with external stakeholders as argued by Ndienge, Herselman & Flowerday, (2012) who stated that AC acts as a link between external knowledge, firm performance and the innovative capacity of firms by discovering and integrating new opportunities with existing knowledge. The respondents also agreed to the statement that training and development and mentorship of staff is part was part of their strategy for innovation as supported by Tsai (2001) who argues that Firms develop their capacity to absorb new knowledge through capacity building their staff in Knowledge management activities.

#### **5.2.4 Finding on the Innovative Capacity of Commercial Banks in Kenya**

Respondents in the study agreed their respective banks had strategies which were geared towards the launch of new products and services since they were required to always remain innovative so as to survive the turbulent business environment. They also agreed that due to the continuous innovation of new products and services and improvement on the already existing ones, service delivery to their clients had improved over time. It was agreed by respondents that the profit margins of their respective banks had risen over the last 5 years and that their brand name had also improved. They also agreed that each year, their respective banks introduce at least two new products and services to the market which helps to maintain steady growth in their revenue.

### **5.3. Conclusion**

The study concluded that the variables Firm networks, human capital and firm absorptive capacity greatly influence the innovative capacity of commercial banks in Kenya. This was evident by the rejection of the null hypothesis of all the three independent variables and accepting the alternative hypothesis. This was attributed to the following factors; valuable

relationships with various stakeholders, collaboration with universities and other R&D units and other innovative institutions, developing external networks with specialist knowledge and developing skills by working closely with the local and national education institutions. Other attributes included creating a culture where staff work in well coordinate teams across departmental boundaries, involving staff in decision making regarding innovation through supportive structures and ensuring open communication within the bank and putting in place effective reward and recognition systems.

Effective knowledge management systems and creating specific divisions to spearhead innovation were also part of the factors that influenced the innovative capacity of commercial banks in Kenya. Others included knowledge sharing between staff, training of staff in Knowledge management activities, strategy evaluation and application of knowledge management initiatives within the bank.

It was therefore concluded that all the independent variable firm networks, Human capital and absorptive capacity greatly influence the innovative capacity of commercial banks in Kenya. This was supported by the testing of hypothesis where all the null hypothesis in the study were rejected and the alternatives accepted. It was also supported by results of regression analysis which indicated that all the independent variables had high R and adjusted R square values indicating that they influenced the depended variables at with high percentages.

## **5.4 Recommendations**

### **5.4.1 Firm Networks**

The study also recommends that since competition in all sectors is becoming intensive, banks ought to intensify their collaboration networks and embrace open innovation not only with other banks for the purpose acquiring new knowledge, cost reduction, manpower, shared markets and technology transfer among other benefits. Banks to ought to create competitive

intelligence units to spy on their competitors in the banking industry. This will help them to get ahead of their competitors and beat them at their game by using the information gathered to innovate new products and services which their competitors ahead of their competitors. Since the innovative mind is young, it is recommended that banks collaborate with universities and other institutions of higher learning to identify young people with innovative skills and nurture them to become great innovators.

#### **5.4.2. Human Capital**

The study recommends effective communication within the banks for effective flow of information and sharing innovative ideas. It further recommends that the management of banks should create an organization culture which allows staff to have freedom to communicate and make decisions concerning innovation, allows staff to share their ideas freely and put the ideas to use and a culture that tolerates mistakes and give staff opportunities to learn from their mistakes. the study further recommends that banks should develop suitable reward and recognition systems that motivate staff to think, generate new ideas and develop the ideas into new products, services, processes and procedures.

#### **5.4.3. Absorptive Capacity**

The study recommends that banks develop and implement knowledge management system that will facilitate acquisition, processing, application, and storage of new knowledge for the purpose of innovation. It also recommends that banks ought to create divisions that specifically deal with innovation unlike it was established in the study that all divisions are tasked with innovation of products and services. They too ought to have product champions who will help to spearhead the innovation process from idea to launch. The study recommends banks to develop clear innovation strategies and evaluate them over time by the monitoring and evaluation divisions and also capacity build their staff on knowledge management activities with emphasis on knowledge creation and sharing for innovation purposes, finally the study

recommends banks to develop a knowledge sharing culture through the use of knowledge initiatives such as communities of practice, knowledge portals such as websites and share points, best practice, peer assist, knowledge centers among others. This will facilitate knowledge sharing between staff for the purpose of innovation.

#### **5.4.4. Innovative Capacity of Commercial Banks in Kenya**

The study recommends that firms should concentrate on improving their innovative capacity since it is the only way through which they can beat competition and survive the turbulent business environment. This can only be achieved by creating strong collaborative networks through which they can enjoy benefits such as cost reduction, gain access to skilled manpower, technology transfer and shared markets. They should prioritize employee welfare by creating an organization culture that facilitates innovation while ensuring a suitable reward and recognition systems to further motivate them. Finally, they should strive to seek new knowledge from external sources and utilise it for innovation of new products and services.

#### **5.5. Implications of the Study**

The findings of the study will be beneficial to several stakeholders. For commercial banks, the study provides insights on how to leverage on the firm internal environment specifically firm networks, human capital, absorptive capacity and other variables not featured in the study to innovate new products and services so as to remain relevant in the market. Policy makers will benefit from the study since it provides vital information about the banking industry that is useful in policy formulation and implementation. The general public will benefit from the study since it provides information that will guide them specifically in choosing their preferred bank of choice where they can invest. For the government, the study will be beneficial since the census method of sampling gives almost accurate information that will guide in regulations and planning for the banking sector.

## **5.6 Suggestion for Further Studies**

From the combined regression model, it was established that firm absorptive capacity did not significantly influence the innovative capacity of commercial banks in Kenya. This calls for further research on this variable to determine why it is not statistically significant when combined with the other two independent variables and yet on its own, it has statistical significance influence over the dependent variable.

Innovative capacity of a firm is a factor that develops over time whilst this study was based on a snap shot approach using a questionnaire, which places significant reliance on the responses by the respondents which may vary in the short term. The researcher recommends further research based on a longitudinal approach of observing the banks over a longer period of time of between five to ten years as this is likely to yield more comprehensive results and therefore accord generalization of results.

The study collected information only from a senior member of staff responsible for innovation in each of the respective banks. Since innovative ideas could arise from any members of staff applying their tacit mind, it is recommended that future studies target a significant number of senior members of staff including the Chief Executive Officer regardless of their position in the organization. This approach would yield more comprehensive results.

## REFERENCES

- Agadjanian, V. (2002). Informal social networks and epidemic prevention in a third world context: Cholera and HIV/AIDS compared. In *Advances in Medical Sociology* (Vol. 8, pp. 201–221). [https://doi.org/10.1016/S1057-6290\(02\)80027-4](https://doi.org/10.1016/S1057-6290(02)80027-4)
- Akesson, M., Skalen, P., Edvardsson, B., & Stalhammar, A. (2016). Value proposition test-driving for service innovation: How frontline employees innovate value propositions. *Journal of Service Theory and Practice*, 26(3), 338–362. <https://doi.org/10.1108/JSTP-10-2014-0242>
- Al-Benna, S., Al-Ajam, Y., Way, B., & Steinstraesser, L. (2010). Descriptive and inferential statistical methods used in burns research. *Burns*, 36(3), 343–346.
- Alguezaui, S., & Filieri, R. (2010). Investigating the role of social capital in innovation: Sparse versus dense network. *Journal of Knowledge Management*, 14(6), 891–909. <https://doi.org/10.1108/13673271011084925>
- Aluko, O. A., & Ajayi, M. A. (2018). Determinants of banking sector development: Evidence from Sub-Saharan African countries. *Borsa Istanbul Review*, 18(2), 122–139. <https://doi.org/10.1016/j.bir.2017.11.002>
- Awais Ahmad Tipu, S. (2014). Employees' involvement in developing service product innovations in Islamic banks: An extension of a concurrent staged model. *International Journal of Commerce and Management*, 24(1), 85–108. <https://doi.org/10.1108/IJCoMA-09-2013-0095>
- Awazu, Y. (2004). Informal network players, knowledge integration, and competitive advantage. *Journal of Knowledge Management*, 8(3), 62–70. <https://doi.org/10.1108/13673270410541042>
- Backstrom, I., & Bengtsson, L. (2019). A mapping study of employee innovation: Proposing a research agenda. *European Journal of Innovation Management*. <https://doi.org/10.1108/EJIM-05-2018-0101>
- Banu, G. S. (2018). Measuring innovation using key performance indicators. *Procedia Manufacturing*, 22, 906–911. <https://doi.org/10.1016/j.promfg.2018.03.128>

- BarNir, A., & Smith, K. A. (2002). Interfirm Alliances in the Small Business: The Role of Social Networks. *Journal of Small Business Management*, 40(3), 219–232. <https://doi.org/10.1111/1540-627X.00052>
- Baskarada, S., & Koronios, A. (2018). Strategies for maximizing organizational absorptive capacity. *Industrial and Commercial Training*, 50(2), 95–100. <https://doi.org/10.1108/ICT-07-2017-0060>
- Bhatt, P., & Altinay, L. (2013). How social capital is leveraged in social innovations under resource constraints? *Management Decision*, 51(9), 1772–1792. <https://doi.org/10.1108/MD-01-2013-0041>
- Bracke, P. (2016). Social networks and relational capital in library service assessment. *Performance Measurement and Metrics*, 17(2), 134–141. <https://doi.org/10.1108/pmm-04-2016-0019>
- Bryman, A. (2004). *Social research methods* (2<sup>nd</sup> ed.). New York: Oxford University Press
- Central bank of Kenya (2017). Bank supervision annual Report
- Cheruiyot, C. K. (2012). *Institutionalization of Knowledge Management in Manufacturing Enterprises in Kenya: A Case of Selected Enterprises*. 3(10), 12.
- Chuluun, T., Prevost, A., & Upadhyay, A. (2017). Firm network structure and innovation. *Journal of Corporate Finance*, 44, 193–214. <https://doi.org/10.1016/j.jcorpfin.2017.03.009>
- Codini, A. P. (2015). Business networks along innovation life cycle. *Journal of Business & Industrial Marketing*, 30(3/4), 329–341. <https://doi.org/10.1108/JBIM-11-2012-0235>
- Cooper, D. R., & Schindler, P. S. (2008). *Business Research Methods* (9<sup>th</sup> edition). USA: McGraw-Hill
- Cropley, D. & Cropley, A. (2017). Innovation capacity, organisational culture and gender. *European Journal of Innovation Management*, 20(3), 493–510. <https://doi.org/10.1108/EJIM-12-2016-0120>
- Dagnino, G. B., Levanti, G., Minà, A., & Picone, P. M. (2015). Interorganizational network and innovation: A bibliometric study and proposed research agenda. *Journal of*

*Business & Industrial Marketing*, 30(3/4), 354–377. <https://doi.org/10.1108/JBIM-02-2013-0032>

D'Andreta, D., Marabelli, M., Newell, S., Scarbrough, H., & Swan, J. (2016). Dominant Cognitive Frames and the Innovative Power of Social Networks. *Organization Studies*, 37(3), 293–321. <https://doi.org/10.1177/0170840615613374>

de Rozario, P. (2016). The Innovation Dilemma in the Financial Industry: French Domestic Credit Institutions. In S. Alijani & C. Karyotis (Eds.), *Critical Studies on Corporate Responsibility, Governance and Sustainability* (Vol. 11, pp. 161–177). <https://doi.org/10.1108/S2043-905920160000011008>

Dickson, K. E., & Hadjimanolis, A. (1998). Innovation and networking amongst small manufacturing firms in Cyprus. *International Journal of Entrepreneurial Behavior & Research*, 4(1), 5–17. <https://doi.org/10.1108/13552559810203939>

Díez-Vial, I., & Montoro-Sánchez, Á. (2014). Social capital as a driver of local knowledge exchange: A social network analysis. *Knowledge Management Research & Practice*, 12(3), 276–288. <https://doi.org/10.1057/kmrp.2014.7>

Fliaster, A., & Golly, T. (2014). Innovation in small and medium-sized companies: Knowledge integration mechanisms and the role of top managers' networks. *Management Revu*, 25(2), 125–147. <https://doi.org/10.5771/0935-9915-2014-2-125>

Frankfort-Nachmias, C., & Nachmias, D. (1996) *Research Methods in the Social Sciences* (5<sup>th</sup> ed.) London: Arnold

Gupta, S. K. & Rangi, R. (2014). *Research methodology. Methods, tools and techniques* (4<sup>th</sup> ed.). New Delhi: Kalyan Publishers.

Hacker, J. V., Bodendorf, F., & Lorenz, P. (2017). A framework to identify knowledge actor roles in enterprise social networks. *Journal of Knowledge Management*, 21(4), 817–838. <https://doi.org/10.1108/JKM-10-2016-0443>

Hettmansperger, T. P. (1984). Statistical inference based on ranks.

- Hoffman, J. J., Hoelscher, M. L., & Sherif, K. (2005). Social capital, knowledge management, and sustained superior performance. *Journal of Knowledge Management*, 9(3), 93–100. <https://doi.org/10.1108/13673270510602791>
- Hon, A. H. Y., & Lui, S. S. (2016). Employee creativity and innovation in organizations. *International Journal of Contemporary Hospitality Management*, 28(5), 862–885. <https://doi.org/10.1108/IJCHM-09-2014-0454>
- Inauen, M., & Schenker-Wicki, A. (2011). The impact of outside-in open innovation on innovation performance. *European Journal of Innovation Management*, 14(4), 496–520. <https://doi.org/10.1108/14601061111174934>
- Iqbal, S., Toulson, P., & Tweed, D. (2015). Employees as performers in knowledge intensive firms: Role of knowledge sharing. *International Journal of Manpower*, 36(7), 1072–1094. <https://doi.org/10.1108/IJM-10-2013-0241>
- Karanja, B. G. (2013). *Effects of social networking on employee performance: A survey of banks in Murang' a town* (Thesis). Retrieved from <https://ir-library.ku.ac.ke/handle/123456789/7111>
- Kasevu, V. (2011). Innovative strategies and competitive advantage among commercial banks in Kenya. (Thesis). Retrieved from <https://ir-library.ku.ac.ke/handle/123456789/7111>
- Kesting, P., & Parm Ulhoi, J. (2010). Employee-driven innovation: Extending the license to foster innovation. *Management Decision*, 48(1), 65–84. <https://doi.org/10.1108/00251741011014463>
- Kombo, D.K. & Tromp D.L.A, (2006). *Proposal and thesis writing an introduction*. Pualines Publications Africa, Nairobi, Kenya.
- Kothari, C. R. (2004). *Research methodology: methods and techniques*. (2<sup>nd</sup> ed.). New Delhi: New Age International (P) Ltd.
- Kuczmarski, T. D. (2003). What is innovation? And why aren't companies doing more of it? *Journal of Consumer Marketing*, 20(6), 536–541. <https://doi.org/10.1108/07363760310499110>
- Kvale, S. (2007), *Doing Interviews*, Sage, London.

- Louw, L, Muriithi, S. M. & Radloff, S., (2017). The relationship between transformational leadership and leadership effectiveness in Kenyan indigenous Commercial banks. *South African Journal of Human Resource Management*. vol. 15. 1-11
- Lovejoy, W. S., & Sinha, A. (2010). *Efficient Structures for Innovative Social Networks*. *management science* (56) 1127-1145
- Marakavelis, P. (2019). The use of statistics in social sciences. *journal of humanities and applied social sciences*. <https://doi.org/10.1108/JHASS-08-2019-0038>
- Martin, S. L., & Javalgi, R. (Raj) G. (2019). Explaining performance determinants: A knowledge-based view of international new ventures. *Journal of Business Research*. <https://doi.org/10.1016/j.jbusres.2019.02.041>
- Martín-de Castro, G., López-Sáez, P., & Delgado-Verde, M. (2011). Towards a knowledge-based view of firm innovation. Theory and empirical research. *Journal of Knowledge Management*, 15(6), 871–874. <https://doi.org/10.1108/13673271111179253>
- McKelvie, A., Wiklund, J., & Short, J. C. (2007). The New Venture Innovation Process: Examining the Role of Absorptive Capacity. In *Advances in Entrepreneurship, Firm Emergence and Growth* (Vol. 10, pp. 159–185). [https://doi.org/10.1016/S1074-7540\(07\)10007-6](https://doi.org/10.1016/S1074-7540(07)10007-6)
- Mina, A., Bascavusoglu-Moreau, E., & Hughes, A. (2014). Open service innovation and the firm's search for external knowledge. *Research Policy*, 43(5), 853–866. <https://doi.org/10.1016/j.respol.2013.07.004>
- Misati, R & Kamau, A (2015). Local and international dimensions to credit provision by commercial banks in Kenya. Kenya Bankers Association, WPS/04/15
- Mu, J., Peng, G., & Love, E. (2008). Interfirm networks, social capital, and knowledge flow. *Journal of Knowledge Management*, 12(4), 86–100. <https://doi.org/10.1108/13673270810884273>
- Mugenda, O. M. & Mugenda, A. G. (2003) *Research methods: Quantitative and qualitative approaches*. Nairobi: ACTS Press

- Mwangi, S. M. (2014). The influence of innovation on small and medium sizes enterprises (SME) growth: a case of garment manufacturing industries in Nakuru county. *International Journal for Innovation Education and Research* 2 (06)
- Najafi-Tavani, S., Najafi-Tavani, Z., Naude, P., Oghazi, P., & Zeynaloo, E. (2018). How collaborative innovation networks affect new product performance: Product innovation capability, process innovation capability, and absorptive capacity. *Industrial Marketing Management*, 73, 193–205. <https://doi.org/10.1016/j.indmarman.2018.02.009>
- Nanoka, I & Takeuchi H. (1995). The knowledge creating company: how the Japanese create the dynamics of innovation. Oxford: Oxford University Press
- Natti, S., Hurmelinna-Laukkanen, P., & J. Johnston, W. (2014). Absorptive capacity and network orchestration in innovation communities – promoting service innovation. *Journal of Business & Industrial Marketing*, 29(2), 173–184. <https://doi.org/10.1108/JBIM-08-2013-0167>
- Ndiege, J. R., Herselman, M. E., & Flowerday, S. V. (2012). Absorptive capacity: Relevancy for large and small enterprises. *SA Journal of Information Management*, 14(1). <https://doi.org/10.4102/sajim.v14i1.520>
- Ng'anga J. C. (2008)". Determinants of firm networks in Kenya. Nairobi: Kenya Institute for Public Policy Research and Analysis (KIPPRA)
- Nirmala, M., & Vemuri, M. (2009). Leveraging informal networks in knowledge management. *Journal of Knowledge Management*, 13(3), 146–156. <https://doi.org/10.1108/13673270910962932>
- Njogu, Kawira P. 2016 Effect of the value network on the performance of commercial Commercial banks in Kenya. <http://41.89.49.13:8080/xmlui/handle/123456789/1182>
- Norušis, M. J. (2006). *SPSS 14.0 guide to data analysis*. Upper Saddle River, NJ: Prentice Hall.
- Ongong'a J. O. (2011). Networking in the Kenyan informal sector: An attempt to manage the market failures. *AFRICAN JOURNAL OF BUSINESS MANAGEMENT*, 5(28). <https://doi.org/10.5897/AJBM10.1493>

- Parise, S. (2007). Knowledge Management and Human Resource Development: An Application in Social Network Analysis Methods. *Advances in Developing Human Resources*, 9(3), 359–383. <https://doi.org/10.1177/1523422307304106>
- Pyka, A. (2002). Innovation networks in economics: From the incentive-based to the knowledge-based approaches. *European Journal of Innovation Management*, 5(3), 152–163. <https://doi.org/10.1108/14601060210436727>
- Saarenketo, S., Puumalainen, K., Kuivalainen, O., & Kyläheiko, K. (2009). A knowledge-based view of growth in new ventures. *European Business Review*, 21(6), 531–546. <https://doi.org/10.1108/09555340910998823>
- Sadegh Sharifirad, M., & Ataei, V. (2012). Organizational culture and innovation culture: Exploring the relationships between constructs. *Leadership & Organization Development Journal*, 33(5), 494–517. <https://doi.org/10.1108/01437731211241274>
- Schonstrom, M. (2005). Creating knowledge networks: Lessons from practice. *Journal of Knowledge Management*, 9(6), 17–29. <https://doi.org/10.1108/13673270510629936>
- Schroll, A., & Mild, A. (2011). Open innovation modes and the role of internal R&D: An empirical study on open innovation adoption in Europe. *European Journal of Innovation Management*, 14(4), 475–495. <https://doi.org/10.1108/14601061111174925>
- Schultz-Jones, B. (2009). Examining information behavior through social networks: An interdisciplinary review. *Journal of Documentation*, 65(4), 592–631. <https://doi.org/10.1108/00220410910970276>
- Shuman, J., & Twombly, J. (2010). *Collaborative Networks Are the Organization: An Innovation in Organization Design and Management*. *Vikalpa*, 35(1), 1–14. <https://doi.org/10.1177/0256090920100101>
- Swan, J., Newell, S., Scarbrough, H., & Hislop, D. (1999). Knowledge management and innovation: Networks and networking. *Journal of Knowledge Management*, 3(4), 262–275. <https://doi.org/10.1108/13673279910304014>

- Tahir, M., Shah, S. S. A., & Afridi, M. A. (2016). Assessing nature of competition in banking sector of Pakistan. *The Journal of Finance and Data Science*, 2(4), 244–253. <https://doi.org/10.1016/j.jfds.2017.04.001>
- Tsai, W. (2001). *Knowledge Transfer in Intraorganizational Networks: Effects of Network Position and Absorptive Capacity on Business Unit Innovation and Performance*. 10.
- Tseng, C., Chang Pai, D., & Hung, C. (2011). Knowledge absorptive capacity and innovation performance in KIBS. *Journal of Knowledge Management*, 15(6), 971–983. <https://doi.org/10.1108/13673271111179316>
- Van Rensburg, G. H. [et...al] (2009). *Research in the social sciences: only Study Guide for RSC201H*. Pretoria: University of South Africa
- Wadell, C., Björk, J., & Magnusson, M. (2014). How do R&D employees use their social networks to acquire user information? *Journal of Knowledge Management*, 18(5), 919–936. <https://doi.org/10.1108/JKM-06-2014-0245>
- Wanyama, V. T. (2018). *Effect of Knowledge Management on Organization Performance in The Public Service Sector in Kenya* (Thesis, Kca University). Retrieved from <http://41.89.49.13:8080/xmlui/handle/123456789/1380>
- Whelan, C. (2016). Informal social networks within and between organisations: On the properties of interpersonal ties and trust. *Policing: An International Journal of Police Strategies & Management*, 39(1), 145–158. <https://doi.org/10.1108/PIJPSM-07-2015-0087>
- Yang, J., & Wang, F.-K. (2017). Impact of social network heterogeneity and knowledge heterogeneity on the innovation performance of new ventures. *Information Discovery and Delivery*, 45(1), 36–44. <https://doi.org/10.1108/IDD-11-2016-0038>
- YuSheng, K., & Ibrahim, M. (2019). Service innovation, service delivery and customer satisfaction and loyalty in the banking sector of Ghana. *International Journal of Bank Marketing*. <https://doi.org/10.1108/IJBM-06-2018-0142>
- Zhou, S., Siu, F., & Wang, M. (2010). Effects of social tie content on knowledge transfer. *Journal of Knowledge Management*, 14(3), 449–463. <https://doi.org/10.1108/13673271011050157>

## **APPENDICES**

### **Appendix I: Letter to Respondents**

**Jullie Makwata**

**KCA University**

**Town Campus,**

**NAIROBI.**

Dear Respondent,

#### **RE: ACCEPTANCE LETTER**

I am a student at KCA University undertaking a Master of Science Degree in Knowledge Management and innovation. I have chosen your firm to participate in this research on the INFLUENCE OF FIRM INTERNAL ENVIRONMENT ON THE INNOVATIVE CAPACITY OF COMMERCIAL BANKS IN KENYA

Your responses will be used for the research purpose only and your identity treated with a lot of confidentiality.

Kindly respond sincerely to the issues in the attached questionnaire. Please read and answer the questions by ticking the appropriate answer (choice) to the questions given.

Thanking you in advance for your response.

Yours truly,

Jullie Makwata

**Reg No: 10/00992**

KCA University.

## Appendix II: University Introduction Letter



Thika Road, Ruaraka  
P.O. Box 56808-00200 Nairobi Kenya  
Pilot Line: +254 20 8070408/9

Tel: +254 20 3537842  
Fax: +254 20 8561077  
Mobile: +254 734 888022, 710 888022  
Email: [kca@kca.ac.ke](mailto:kca@kca.ac.ke)  
Website: [www.kca.ac.ke](http://www.kca.ac.ke)

KCAU/SGS/MSc/Sept.19/15

September 18, 2019

To whom it may concern,

Dear Sir/Madam,

**RE: MAKWATA JULLIE M. REG NO: 10/00992**

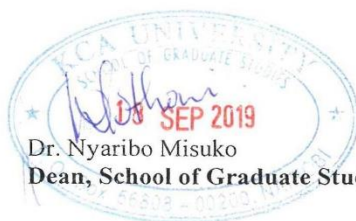
It is my distinct pleasure to introduce to you Ms. Jullie Makwata who is a student in our institution pursuing a Master of Science in Knowledge Management at the School of Business and Public Management.

Jullie is conducting a research on a topic titled: "*The Influence of Firm Internal Environment on the Innovation Capacity of Commercial Banks in Kenya*" which is part of the requirements of the program she is pursuing. The research as well as the data procured thereof shall be used for academic purposes only.

Any assistance accorded to her is highly appreciated.

In case of further inquiry, do not hesitate to contact the undersigned.

Yours faithfully,



Dr. Nyaribo Misuko  
Dean, School of Graduate Studies & Research

### Appendix III: Questionnaire

#### **FACTORS THE INNOVATIVE CAPACITY OF COMMERCIAL BANKS IN KENYA: A SURVEY OF COMMERCIAL BANKS IN NAIROBI CITY**

This Questionnaire is meant to collect from Commercial banks within Nairobi. Any information provided in this Questionnaire will be used for purposes of research only and will not be divulged or availed to unauthorized persons.

Please take a few minutes to complete this questionnaire.

Please answer the questions correctly and as accurate as possible.

Tick the appropriate answer in the boxes provided against the questions.

#### **SECTION A: BACKGROUND INFORMATION**

##### **Bank Particulars.**

1. **Name of the Bank (Optional)** .....

##### **Respondent Particulars**

2. **What is your Gender?**

Male ( )      Female ( )

3. **What is your age Bracket?**

| Number | Age bracket | Tick appropriately |
|--------|-------------|--------------------|
| i      | 21 -30      |                    |
| ii     | 31 40       |                    |
| iii    | 41 -50      |                    |
| iv     | Over 50     |                    |

**4. What is your highest education level of education?**

| <b>Level</b>                 | <b>Please tick appropriately</b> |
|------------------------------|----------------------------------|
| Secondary school             |                                  |
| Tertiary education (college) |                                  |
| Undergraduate degree         |                                  |
| Master's Degree              |                                  |
| PHD                          |                                  |
| Others (specify)             |                                  |

**5. Which Department do you belong?**

| <b>Department</b>        | <b>Tick appropriately</b> |
|--------------------------|---------------------------|
| Innovation               |                           |
| Marketing                |                           |
| Strategy                 |                           |
| Research and Development |                           |
| Finance                  |                           |
| ICT                      |                           |
| Risk                     |                           |
| Others (specify)         |                           |

**6. What is your position in the bank?.....**

**7. How long have you worked in the Banking Sector?**

| <b>No.</b> | <b>Period</b>       | <b>Tick Appropriately</b> |
|------------|---------------------|---------------------------|
| i          | Less than 1 year    |                           |
| ii         | Between 1 – 5 years |                           |
| iii        | Between 5-10 years  |                           |
| iv         | Over 10 years       |                           |

## **SECTION B: FIRM NETWORKS**

8. Please indicate in your own your level of satisfaction on the following aspects as an employee of the bank. Please tick (✓) on the space corresponding to the correct answer in each indicator

Scale: Strongly Disagree = 1: Disagree= 2: Neutral = 3: Agree = 4: Strongly Agree = 5

|      | <b>Influence of firm networks</b>                                                                                                                | 1 | 2 | 3 | 4 | 5 |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| (a)  | The bank values relationships with various stakeholders such as Safaricom, ICT firms, and other firms for the purpose of innovation.             |   |   |   |   |   |
| (b). | The bank values its relationship with various stakeholders and considers their needs in an effort to satisfy them.                               |   |   |   |   |   |
| (c)  | There is collaboration with universities and other R&D units and other innovative institutions towards development of the bank's knowledge base. |   |   |   |   |   |
| (d)  | The bank develops external networks with specialist knowledge.                                                                                   |   |   |   |   |   |
| (e)  | The bank works closely with the local and national education institutions towards skills development.                                            |   |   |   |   |   |

## **SECTION C: HUMAN CAPITAL**

9. Please indicate in your own your level of satisfaction on the following aspects as an employee of the bank. Please tick (✓) on the space corresponding to the correct answer in each indicator.

1: Strongly agree 2: Agree 3: Neutral 4: Disagree 5: highly: Strongly disagree

|      | <b>Influence of firm employees</b>                                                                          | 1 | 2 | 3 | 4 | 5 |
|------|-------------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| (a)  | Staff work well together across departmental boundaries                                                     |   |   |   |   |   |
| (b). | Staff are fully involved in suggesting ideas for improvement to products, processes services and procedures |   |   |   |   |   |

|     |                                                                                                 |  |  |  |  |  |
|-----|-------------------------------------------------------------------------------------------------|--|--|--|--|--|
| (c) | The bank organization structure supports effective and rapid decision making by all staff       |  |  |  |  |  |
| (d) | We have open communication within the bank from top-down, bottom-up and across the organization |  |  |  |  |  |
| (e) | Staff work in well-coordinated teams                                                            |  |  |  |  |  |
| (f) | The bank has a supportive climate for new ideas from all staff.                                 |  |  |  |  |  |
| (g) | The bank's reward and recognition systems support innovation                                    |  |  |  |  |  |

#### **SECTION D: FIRM ABSORPTIVE CAPACITY**

**10. Please indicate in your own your level of satisfaction on the following aspects as an employee of the bank. Please tick (✓) on the space corresponding to the correct answer in each indicator.**

**1: Strongly agree 2: Agree 3: Neutral 4: Disagree 5: highly: Strongly disagree**

|      | <b>Influence of firm Absorptive capacity</b>                                                                                                                                                                                                                    | 1 | 2 | 3 | 4 | 5 |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| (a)  | There are well laid down systems through which the bank acquires, processes store and applies new knowledge.                                                                                                                                                    |   |   |   |   |   |
| (b). | The bank has well established divisions which specializes in innovation of new products and services.                                                                                                                                                           |   |   |   |   |   |
| (c)  | New knowledge acquired from other financial institutions and firms is shared within the organization and considered for innovation of new products and services                                                                                                 |   |   |   |   |   |
| (d)  | Training and development and mentorship of staff is part of our strategy for innovation.                                                                                                                                                                        |   |   |   |   |   |
| (e)  | The bank evaluates its strategies over time to identify knowledge gaps and formulates key strategies to be adopted                                                                                                                                              |   |   |   |   |   |
| (f)  | The bank applies Knowledge Management initiatives in sharing information within and with external stakeholders such as communities of practice, knowledge portals such as websites and share points, best practice, peer assist, knowledge centers among others |   |   |   |   |   |

## **SECTION E: INNOVATIVE CAPACITY OF COMMERCIAL BANKS**

**11. In your own opinion, pick the level of agreement or disagreement with each of the following statements on the innovative capacity of your Bank. Please tick (✓) the appropriate box for each statement below to indicate:**

**Scale: Strongly Disagree = 1: Disagree= 2: Neutral = 3: Agree = 4: Strongly Agree = 5**

|     | <b>Statement</b>                                                                                                                              | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|----------|----------|----------|
| (a) | The bank strategy has been to always launch new products and services every year                                                              |          |          |          |          |          |
| (b) | Our innovation strategy is clearly communicated to support engaged and effective participation for better performance and innovative outcome. |          |          |          |          |          |
| (c) | New processes and procedures have improved service delivery to clients.                                                                       |          |          |          |          |          |
| (d) | The bank has an established protocol for identifying innovative projects.                                                                     |          |          |          |          |          |
| (e) | The bank has a clear mechanism to ensure all departments are involved in innovation at an early stage                                         |          |          |          |          |          |
| (f) | The brand image of the bank has improved overtime.                                                                                            |          |          |          |          |          |
| (g) | Our innovation projects are usually completed on time and within budget.                                                                      |          |          |          |          |          |
| (h) | The bank's profit margins over the last 5 years have grown                                                                                    |          |          |          |          |          |
| (i) | There has been a steady growth in revenue arising from new products and services.                                                             |          |          |          |          |          |
| (j) | The Commercial banks releases at least 2 new products or services to the market every year.                                                   |          |          |          |          |          |

**Thank you for your cooperation**

#### Appendix IV: List of all Commercial Banks in Kenya

|     | <b>BANK NAME</b>                   |
|-----|------------------------------------|
| 1.  | Africa Banking Corporation         |
| 2.  | Bank of Africa Kenya               |
| 3.  | Bank of Baroda Kenya               |
| 4.  | Bank of India                      |
| 5.  | Barclays bank of Kenya Ltd         |
| 6.  | Charterhouse Bank Ltd              |
| 7.  | Chase Bank (K) Ltd.                |
| 8.  | Citi Bank N.A Kenya                |
| 9.  | Commercial Bank of Africa Ltd.     |
| 10. | Consolidated Bank of Kenya Ltd.    |
| 11. | Cooperative Bank of Kenya Ltd.     |
| 12. | Credit Bank Ltd.                   |
| 13. | Development Bank of Kenya          |
| 14. | DIB Bank Kenya Ltd                 |
| 15. | Diamond Trust Bank (K) Ltd.        |
| 16. | Ecobank Kenya Ltd                  |
| 17. | Equity Bank (K) Ltd                |
| 18. | Family Bank Ltd.                   |
| 19. | First Community Bank               |
| 20. | Guaranty trust Bank                |
| 21. | Guardian Bank Ltd.                 |
| 22. | Gulf African Bank.                 |
| 23. | Habib Bank AG Zurich               |
| 24. | Housing finance Bank               |
| 25. | Imperial Bank Ltd                  |
| 26. | I&M bank LTD                       |
| 27. | Jamii bora Bank                    |
| 28. | KCB Bank Kenya Ltd.                |
| 29. | Mayfair Bank Ltd.                  |
| 30. | Middle East Bank Ltd.              |
| 31. | M Oriental bank Ltd                |
| 32. | National Bank of Kenya Ltd.        |
| 33. | NIC Bank Kenya Ltd.                |
| 34. | Paramount Bank Ltd                 |
| 35. | Prime Bank Ltd.                    |
| 36. | SBM Bank (K) Ltd.                  |
| 37. | Sidian Bank Kenya Ltd              |
| 38. | Spire Bank Ltd.                    |
| 39. | Stanbic Bank Kenya Ltd             |
| 40. | Standard Chartered Bank Kenya Ltd. |
| 41. | Transnational Bank Ltd.            |
| 42. | UBA Bank Ltd.                      |
| 43. | Victoria Commercial Bank           |

Source: Central bank of Kenya Bank supervision annual report (2017)