INNOVATIONS BROUGHT ABOUT BY INTERNATIONAL TRADE IN THE SERVICE INDUSTRY IN KENYA (A CASE STUDY OF BANKING SECTOR)

NJAGI ANN NJERI

R50/75009/2014

RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR AWARD OF THE DEGREE OF MASTER OF ARTS IN INTERNATIONAL STUDIES AT THE UNIVERSITY OF NAIROBI.

DECLARATION

I, **NJAGI ANN NJERI**, hereby declare that this research project is my original work and has not been presented for a degree in any other University or Learning institution.

Signed…… Date……

NJAGI ANN NJERI

SUPERVISOR

This project has been submitted for examination with my approval as University Supervisor;

Signed……

Date……

MR. GERRISHON IKIARA

DEDICATION

I wish to dedicate this work to my mother, Faith Njagi who has been my constant source of inspiration. She has given me the drive and discipline to tackle any task with enthusiasm and determination. Without her love and support this research project would not have been made possible; a very special dedication in memory of my dad, Paul Njagi Mbarire who passed away on a love of reading and respect for education. I will always fulfill his academic wishes.

My very special dedication to Christopher M, who supported me entirely and our little princess Chrisanne Pendo who has cooperated a lot and given me a humble time during the entire period of my research.

I also dedicate this project to all my siblings (Catherine, Robert, Peter, Joseph, Flora and their great families) for their day to day encouragement, support and pride in this accomplishment.

ACKNOWLEDGEMENT

First and foremost, I take this opportunity to thank the almighty God for his gift of life and wisdom that has seen me throughout the period I enrolled for this course and the strength to overcome any hurdles while compiling this research project.

I take this opportunity to express my gratitude to the people who have been instrumental in the successful completion of this research project. I would like to show my greatest appreciation to my supervisor, Mr. Gerrishon Ikiara for offering intellectual supervision and guidance at every stage of this project. Without his help and support, this project would not have materialized.

The guidance and support received from all the members who contributed to this project in various ways, is vital for its success. I am grateful for their constant support and help.

Special thanks to management of Institute of Diplomacy and International Studies, Board of Postgraduate Studies, College of Humanities and Social Sciences and the entire Administration of The University of Nairobi for offering me admission to the University, providing all what it pertains to the success of my course. Finally, I appreciate the support and love of my fellow classmates; it really is a team effort.

ABSTRACT

This study seeks to investigate the innovations brought about by international trade in the service industry in Kenya with a focus in the banking sector. It seeks to answer several questions: What are technological innovations adopted by Kenya's banking sector? How has the banking sector in Kenya benefited from technology transfer and international trade? What is the growth and impact of internet banking in Kenyan banks?

The specific objectives of this study are: to examine the overview of the banking sector, explore technological innovations adopted by Kenya's banking sector and to find out the growth and impact of internet banking in Kenya. The study is certain that the respondents gave honest views/responses. The research tools proposed were intended to give correct results thus factual. None of the respondents had prior instructions on information to be researched and the sample population taken was a representative of the entire population targeted.

The justification of this study is intended to be very useful to the policymakers, academia and general population. The gaps identified and recommendations made by the end of this research are very significant and will enlighten all the stakeholders in the targeted industry. The research is based on theoretical framework which draws its concept from a theory known as; the Comparative advantage theory.

Finally, this research shall fill the void left by any earlier research related to the topic of study and be useful to any future study being a basis for the literature review**.** The research has employed various research methodologies; both primary and secondary methods of data collection which were used while questionnaires and interview guides were used as data collection tools. Selection of respondents was done using convenience sampling technique of the sample population of 100 respondents.

LIST OF ABBREVIATIONS AND ACRONYMS

ICT	-	Information and Communications Technology
EU	-	European Union
US	-	United States
IT	-	Information Technology
MNCs	-	Multinational Corporations
IBM	-	International Business Machines
MPesa	-	Mobile Money
GDP	-	Gross Domestic Product
MFIs	-	Microfinance Institutions
DFIs	-	Development Finance Institutions
SACCOs	-	Savings and Credit Co-operatives
KPOSB	-	Kenya Post Office Savings Bank
ROSCAs	-	Rotating Savings and Credit Associations
ATM	-	Automated Teller Machines
SMS	-	Short Message Service
PoS	-	Point of Sale
RTGs	-	Real Time Gross Settlement
OECD	-	Organization for Economic Co-operation and Development
WTO	-	World Trade Organization
TRIPs	-	Trade-Related Aspects of Intellectual Property Rights

BITs	-	Bilateral Investment Treaties
PC	-	Personal Computer
ISPs	-	Internet Service Providers
ISDN	-	Integrated Services Digital Network
DSL	-	Digital Subscriber Line
VoIP	-	Voice over Internet Protocol
DFIs	-	Development Finance Institutions
NBFIs	-	Non-Bank Financial Institutions
KCB	-	Kenya Commercial Banks
NSSF	-	National Social Security Fund
NBK	-	National Bank of Kenya
FIPA	-	Foreign Investment Protection Act
SAPs	-	Structural Adjustment Programmes
CBK	-	Central Bank of Kenya
WEF	-	World Economic Forum
GCR	-	Global Competitiveness Report
R & D	-	Research and Development
FDI	-	Foreign Direct Investment
KBA	-	Kenya Banking Association
BPO	-	Business Process Outsourcing
MoU	-	Memorandum of Understanding

PPS	-	Probability Proportion to Size
SWIFT	-	Society for Worldwide Interbank Financial Telecommunication
CDs	-	Certificate of Deposits
EFT	-	Electronic Funds Transfer
BIC	-	Bank Identifier Code
IVR	-	Interactive Voice Response
CBS	-	Core Banking Solutions
PIN	-	Personal Identification Number

TABLE OF CONTENTS

CHAPTER ONE

STUDY SETTING

1.0 Introduction

ICT has greatly influenced the business globally through its application and innovations. It is a major driver of economic and development across the globe today and has been used to promote productivity and efficiency. ICTs are rapidly changing the global production, both domestic and international trade, business operations, consumer tastes and preferences among others. In 1990s, ICT expanded strongly when it became a major driver of growth in the EU, US and Asia. It consists of three pillars notably: information technology that include IT services, telecommunications equipment and telecommunications services. ICT allows for an easy exchange of information between various locations and thus helps to coordinate a geographically dispersed production structure. The transmission of information across the world has been facilitated by IT through increasing the speed and efficiency. This has greatly changed the earlier setting of global service transactions. Data collection and processing is done then transmission of ready information takes an electronic form. The computers are linked to a remote user through a communications system and thus becoming highly tradable. The transfer of computerized data across the national borders takes place between the service provider and an unrelated user. These data flows are mainly used by Multinational Corporations (MNCs) and they also use their personal networks avoiding the common carriers; thus affecting low-cost information transfers to and from their subsidiaries. Some of the benefits brought about by increased tradability of services include; transport costs reductions that have enhanced greater exploitation of economies of scale, service industries have reallocated some activities to less-cost locations and exported their products to further locations as a result of reduction in transport costs.

This chapter covers background to the study, problem statement, objectives to the study, research questions, justification, literature review, summary of gaps in the literature review, theoretical framework and methodology.

1.1 Background of the study

The ICT sector is one of the major driving forces that determine the size of the trade balance in commercial services. The use and production of ICT plays a crucial role in the ability of nations to participate in global economic activities. IT has a wide array of convergent and linked information-goods which include telecommunications equipment, computers, various hardware, data recognition equipment among others while on information-services activities consist of telecommunications services, computer services, software, information storage and retrieval. The IT has brought about new innovations in design of the products and their delivery in the banking sector in Kenya.

Kenya is one of the leading countries in Africa for ICT innovation and services, bandwidth increased, investments, fall in tariffs and improved quality in service delivery. The main financier of ICT innovations in Kenya is the World Bank as well as African Development Bank which finances mainly ICT capacity building activities and ICT infrastructure. Other financiers include the MNCs such as Safaricom, Zuku, IBM, Samsung, Nokia and also venture capitalists. The ICT falls under the transport and telecommunications sector with ICT assuming a strategic role in Kenyan economy in recent years. Kenya liberalized ICT sector in 2000 leading to a technological revolution which has stimulated innovation and transforming Kenyans' lives. The sector has outperformed all other segments of the economy and grew by 23 per cent during 2000 to 2009.

In East Africa, Kenya is emerging as a recognized ICT leader through the technological revolution known as MPesa (Mobile money-transfer). This mobile banking technology has taken centre stage and become very successful in money transfer and payment through MPesa platform. It is transforming the lives of her people and enabled the rural communities to enjoy and easily access their personal accounts by just providing proof of their national identification and registration of their phone numbers as opposed to formal banking institutions. By use of local community agents, quick accessibility of this facility has made it very convenient for the rural community. ICT has recently outperformed all other sectors with presence of web-based and mobile-phone start-ups contributing greatly to GDP growth.

1.1.1 Banking sector and adoption of technological innovations

The growth of any country's economy is attributed by both diversification and expansion of the financial system. Kenya's economic growth is a good example since independence and the development of the banking system has been observed. The financial sector comprises of commercial banks, development finance institutions, non-bank financial institutions, stock exchange, insurance companies among others. The Kenyan banking system is supervised by the Central Bank of Kenya. Banking services still dominate Kenya's financial service industry and fall under that category; one of the segments of Kenya's economic sectors. Others in this category include: Capital markets, Pension schemes, Insurance, MFIs, DFIs, SACCOS, KPOSB and ROSCAs (which fall under informal financial services). In the past decades, banks were using the manual banking systems until recently when they started investing in digital banking infrastructure and adopting new technologies such as electronic transactions and online banking systems. Different technologies have been adopted by banks with an aim of customer satisfaction and achieving their objectives. The contemporary innovations in technology adopted by these banks are proving to be useful in their day to day work. There are some notable applications of ICT within the banking sector in development of products and services that have enabled banks to provide more diversified, convenient and secure financial services. These are: internet and mobile banking, ATM services, SMS and Telephone banking, Networked branches, POS banking (credit and debit cards) and also Electronic Bill Payment (done through transfers), RTGS, M-Pesa etc. Other applications include operational risk mitigation through development of business continuity plans which focus on back-up systems, enhanced security systems, core banking solutions and disaster recovery sites.

The term “banking technology” refers to the use of sophisticated information and communication technologies together with computer science to enable banks to offer services to its customers in a secure, reliable, and affordable manner, and sustain competitive advantage over other banks. Banking technology also subsumes the activity of using advanced computer algorithms in unravelling the patterns of customer behaviour by sifting through customer details such as demographic, psychographic, and transactional data.

This activity, also known as data mining, helps banks achieve their business objectives by solving various marketing problems such as customer segmentation, customer scoring, target marketing, market-basket analysis, cross sell, up-sell, customer retention by modelling churn,

and so forth. (Ravi, 2007)[1] The Kenyan banks have also incorporated the mobile technology through a partnership with the service provider (Safaricom) and employed Mobile banking (a system that allows their customers to conduct several financial transactions through their mobile phones).

1.2 Statement of the research problem

Application of technology and innovations is a global trend which every nation has and continues to adopt. Adoption of ICTs in banking sector, which is commonly referred to as electronic banking (e-banking) is meant to provide adequate accuracy and freedom with high level of integrity in financial services and any business transaction activities both locally and internationally. Almost all banking processes are likely to be affected by swift IT progress hence will produce a wide range of financial innovations. Various scholars have conducted researches related to this topic of study but, there is none that has delved into bank ICT innovations and what they have brought about in the service industry particularly the Kenyan banks. There is very scanty information on this subject. According to (Möckel, 2010) innovation occurs through a combination of the concepts of diffusion and invention or adoption of processes, structures, product and services. She further points out that the financial innovation and new technologies have been experienced by customers mostly through new automated channels such as online banking or self-service terminals. On the other hand, some authors argue that with emergence of internet and smart phone technology several changes have been experienced while transacting business. Furthermore, they view settlement of payments through electronic means to have become very sophisticated and to a major extent, feel that it is a driver of service innovation in-banking sector. Similarly, they argue that with emergence of online and other forms of electronic banking, there are high risks involved which include security breaches and fraud.

However, no research has been conducted in Kenyan banks to establish the impact of the innovations in the banking sector. This creates a literature gap which this research sought to fill. Some authors that have explored a similar topic on innovations in service industry particularly in the banking sector have provided very scanty information; have not delved into how innovations

[1] Ravi, Vadlamani, *Advances in Banking Technology and Management: Impacts of ICT and CRM (*Hershey, New York: IGI Global, 2007)
p. 1.

in banks may have contributed to the efficiency of Kenyan banks. Thus, this study explores impact of innovations on efficiency of Kenyan banks as well as how it influenced the way people do business in Kenya.

1.3 Objectives of the study

The overall objective of this study was to examine the innovations brought about by international trade in the service industry in Kenya with a focus in the banking sector.

1.3.1 Specific objectives

1) To examine the overview of the banking sector
2) To explore technological innovations adopted by Kenya's banking sector
3) To find out the growth and impact of internet banking in Kenya.

1.4 Research Questions

1) What are technological innovations adopted by Kenya's banking sector?
2) How has the banking sector in Kenya benefited from technology and international trade?
3) What is the impact of internet banking in Kenyan banks?

1.5 Justification

The study is important for policymakers to note that proper mechanisms should be put in place to ensure proper flow of international technology transfers which would be essential in fostering growth and development in the country. This should be guided by an emphasis taken into account by this study and previous studies conducted that indicate insufficient flow of technology in developing countries such as Kenya that have not taken place as expected by policymakers.

Also, this study has looked at trade barriers that have affected international trade in service sector. It is worth noting that these barriers are great impediments to trade in services despite some being considered as control mechanisms to infant industries in the country. The policy makers should take into account the barriers, government laws and regulations created deliberately on exports and imports that impede market access. Mechanisms should be put in

place to ensure reduction or elimination of those barriers to open up new markets and create export opportunities in service industry in Kenya.

Various scholars have conducted researches related to this topic of study but, there is none that has delved into international trade and ICT innovations and their impact in the service industry particularly the international technology transfer in the Kenyan banks. There is very scanty information on this subject and thus, this study will be very useful in the field of academia by adding more literature that shall be useful for future readings and reference. The gaps identified in the literature review and recommendations made at the end of this research will equally enlighten the readers and stakeholders in the banking sector hence facilitate implementation where necessary.

Diffusion of technologies and innovations as a result of international technology transfer to populace in any given country is vital due to the benefits that come with them. This study has examined challenges in technology transfer especially in the banking sector and pointed out how with such emerging innovations notably, e-banking is beneficial to the population who are the key consumers. For example, they widen the networks and save on time, costs and reduce risks among others.

Similarly, it will help the banks identify the perception the public, particularly their bank customers have about electronic banking services they are providing and use it to improve their services and delivery. With globalization taking centre stage today, embracing these innovations cannot be overemphasized.

1.6 Literature Review

1.6.1 Introduction

This chapter provides a critical review of synthesis of carefully selected literature related to the present study. It examines what various scholars have studied and written about technological innovations as a result of international trade in service industry particularly the banking sector.

1.6.2 International technology transfer and innovation

The continued rapid fall in cost of communication and transportation have not only powered the integration of goods and service markets, but also facilitate an accelerated pace of technological dissemination. Integral to these changes have been innovations in business organization that have spawned new trends in trade. The services formerly thought to be largely non-tradable, have become a leading sector in global trade – including, for example accounting, financial, legal, construction services, and many more (OECD, 2012)[2] The author further looks at service trade being currently a driving productivity in that; trade in services has increasingly become important in proportion to the overall growth in international trade. The largest services in trade are in travel, transport and other business services while trade growth has been strongest in computer services, finance and other business services.

Besides being a driver of productivity growth, they are also sources of employment in many countries. (Offshoring and outsourcing of services have figured prominently in the growth rate of services especially in back office services, software development, research and development functions.[3] He also argues that an earlier study done by a section of ICITE team, concluded that new technologies seen in computers, tablets, smart phones and other telecommunications particularly are transforming the links between business services and production in both consumer and investment industries.

Their argument was that openness in business services can support a deepening virtuous circle of specialization, productivity growth and movement up the quality ladder in manufactured exports. Their view is that using imported intermediate business services helps tailor the product to the needs of the export market and this is one determinant of expanding export share.

Another study conducted on study of services in a developing country by Mattoo and Payton according to OECD, moving towards greater services liberalization was likely to contribute to future productivity growth in several sectors and provide new sources of exports. On the other hand, the author argues that competition from imports - arising from liberalization or new technological advances could drive firms out of business or induce firms to improve their productivity by adopting new technologies, shedding labour or focusing on a narrower range of

[2] Lippoldt, Doughlas., *Policy Priorities for International Trade and Jobs* (France: OECD Publishing, 2012) p. 8

[3] Ibid., p. 8.

product lines. Similarly, import competition may create incentives for firms to opt-out of the formal sector altogether to minimize costs associated with compliance with standard labour protection laws.[4] A main channel through which trade increases income is productivity growth. Importing creates competition that forces domestic firms to become more efficient and provides access to inputs of international caliber; exporting creates incentives for firms to invest in the most modern technologies, scales of production and worker training. The combined effect is to spawn a process of continual resources reallocation, shifting capital and labour into activities with higher productivity.[5]

He also notes that trade-led growth, much like growth emanating from technological progress, requires reallocation of resources, and because expanding sectors may not have the same skill requirements as contracting sectors, the process is often uneven, with some workers benefitting through higher wages and some workers left behind.[6] Evidence on trade-related volatility seem to indicate risks to workers' incomes may in fact be on the rise with integration. Moreover, to the extent that the pace of integration and technical changes is accelerating, these costs maybe expected to be greater in the future hence they deserve the attention of policy makers.

According to OECD, indigenous technological change in developing countries takes place through imports of machinery, office equipment and other capital assets that require skilled labour.[7] Similarly, according to the author, the rise of trade in ICT services has captured the headlines as a potentially disruptive force in international labour markets. The sector accounted for less than 4 per cent of global services trade in 1997, but has more than doubled its share to about 9 per cent in 2010. The world's largest exporter of ICT services is India, followed by Ireland and the United States. ICT services feature most prominently in middle income countries exports where they accounted for more than 13 per cent in 2009 as compared to about 9 per cent in OECD countries. He notes that services used to be considered as one non-tradable sector and majority are non-storable and require face-to-face interaction between producers and consumers in real time. However, he argues that even services that in principle maybe digitized and transmitted across borders over the internet may not be traded as much as one would expect. He

[4] Lippoldt, Doughlas., *Policy Priorities for International Trade and Jobs* (France: OECD Publishing, 2012) p. 38
[5] Ibid., p. 47
[6] Ibid., p. 48.
[7] Lippoldt, Doughlas., *Policy Priorities for International Trade and Jobs* (France: OECD Publishing, 2012) p. 152.

cites the most ingredients in digitized services as information, and language barriers may consequently be more crucial for business services than for goods. The author points out that sometimes individual country specialize in ways that seem to be at odds with their comparative advantage. He gives reasons as: One possibility is simply that in a world of many sectors, many factors of production and vertically linked sectors, the pattern of specialization is more complex than what can be captured by a simple version of the theory of comparative advantage.[8] Another reason may- be barriers to trade and investment that prevents countries from exploiting their comparative advantage.[9] He gives a good example of India, where he says it has historically imposed a heavy regulatory burden on its manufacturing firms and that has created impediments for Indian manufacturing firms to reach minimum efficient scale. Consequently, India produces a far smaller share of global manufacturing sector compared to its size and factor endowments would suggest. Thus, the policy mix that impedes the manufacturing sector could create an artificial comparative advantage in tradable business services in India. There are considerable empirical studies on international technology transfer that promote growth and development in developing countries.

International transfers of technology have become acknowledged as one of the effective mechanisms that promote growth and development in developing countries.[10] Increasing the local productivity by means of technological transfer thus allows the creation of indigenous technical knowledge and leads to a substantial level of technological catch-up. As a result, the importance of the regulatory standards for international technology transfers has gained enormous attention with the conclusion of the Uruguay Round of the WTO negotiations in the 1990s (particularly through the conclusion of the Agreement on Trade-Related Aspects of Intellectual Property Rights-frequently known as the TRIPS Agreement-as part of the Marrakesh meetings of 1994), as well as with the substantial-increase in the number of bilateral investment treaties (BITs) in the last decade (Tang, 2009)[11] In theory, he defines technological transfer "as an activity in the interest of both companies and governments, since it fosters local development

[8] Ibid., p. 183.
[9] Ibid., p. 183.
[10] Yi Shin Tang, *The International Trade Policy for Technology and Economic Transfers* (The Netherlands: Kluwer Law International, 2009) p. 3
[11] Ibid., p . 3

through the transmission of technical knowledge and equipment, while it also provides large opportunities for trade gains among companies and states".

Technology transfer involves the international community in general for the movement of technology, whereas technology diffusion is limited to the scope of technology in the domestic context (Liu, Fang, Shi, & Guo, 2009).[12] However, they argue that technology- diffusion and technology transfer have common links as well as clear distinctions. Technology innovation and technology transfer areas are two complementary processes.[13] Technology transfer cannot be separated from technology innovation and the latter is critical to technology progress as a whole.[14] They form the fundamental mechanism in the process of technology, the improvement of economics and social economic development; they comprise the entire course of technology invention (emergence of new technologies), technology development (new technology), and technology diffusion (the application of new-technologies to promote).[15] They further argue that, technology innovation is a basic prerequisite and the main source for technology transfer; technical innovation drives the process of technology transfer from the content as the source of the transfer.

Technology transfer is the driving force behind technology innovation and it not only provides technical resources but also energizes the act of innovation. Technology diffusion makes the innovation more complete and effective. Further they note that, technology transfer takes place between different countries and regions, enterprises, colleges and universities, research institutes and others where the enterprise is the most important subject. It happens in a variety of specific ways, which can be roughly divided into two categories: internal and external technology transfer. In essence, technology transfer has been a one-way transfer from developed countries to less developed countries, advanced regions to laggard regions, central departments to the external sectors, all of these showing the gradient. Thus, developed countries have long been the exporters of technology products and on the other hand, developing countries are the importers. The multinational companies have become the main force of international technology transfer

[12] Liu, Sifeng; Fang, Zhigeng; Shi, Hongxing; Guo, Benhai., *Theory of Science and Technology Transfer and Applications* (CRS Press, 2009) p. 10
[13] Ibid., p. 11.
[14] Ibid., p. 11.
[15] Liu, Sifeng; Fang, Zhigeng; Shi, Hongxing; Guo, Benhai., *Theory of Science and Technology Transfer and Applications* (CRS Press, 2009) p. 11.

using their huge financial resources and strong technical force. Governments' intervention in technology transfer is greater in degree than the general commodity trade.

Some studies have showed a few notable applications of ICT within the banking sector in development of products and services that have enabled banks to provide more diversified, convenient and secure financial services. These are: ATM services, internet and mobile banking, SMS and Telephone banking, Networked branches, POS banking (credit and debit cards) and also Electronic Bill Payment (done through transfers), RTGS, MPesa (an innovative mobile money transfer solution that enables one to do transactions safely and conveniently using a mobile handset and Safaricom line).

1.6.3 Financial innovations and technological change

According to (Berger & Wilson, 2010) they define a financial innovation as something new that reduces costs, risks or provides an improved product/service/instrument that better satisfies financial system participants' demands. They further point out that they can be grouped as new products (e.g. subprime mortgages) or even services (e.g. internet banking); new production process (e.g. credit scoring); or new organizational forms (e.g. internet-only banks). This sector plays a very crucial role in the economy, underpinning private sector development, facilitating investment in business, technology and training and contributing to productivity, competitiveness and growth. Access to financial services also contributes directly to poverty reduction, enabling poor households to strengthen their livelihoods by investing in micro-enterprises and to better manage the risks they face. (Massimiliano Cali, 2008) [16] He points out that, opening up the financial sector to trade can significantly improve a country's overall financial sector performance with important knock-on benefits for the rest of the economy. Openness to foreign financial service providers often results in greater efficiency, dynamism and innovation. It stimulates improvements in domestic banking performance, and has significant potential benefits

[16] Massimiliano Cali, Karen Ellis, Dirk Willem te Velde., *The contribution of services to development and the role of trade liberalisation and regulation* (London: Overseas Development Institute, 2008), p. 28

for consumers through improved service delivery and for the economy as a whole through a more efficient allocation of capital.[17]

Internet banking is an emerging technology that permits conduct of banking transactions through the internet. "Internet banking" refers to systems that enable bank customers to access accounts and general information on bank products and services through a personal- computer (PC) or other intelligent device. Internet banking products and services can include wholesale products for corporate customers as well as retail and fiduciary products for customers. (Ravi, 2007) [18] The author also notes that, the technology development process can be seen as a series of disjoint developments in different fields. In case of internet banking, it boils down to key complementary technological assets such as encryption technology that permits online security systems, increased internet access for individual users through- Internet Service Providers (ISPs), and benefits from advances in basic telecommunications technologies such as faster connections through modems or through new developments in communications infrastructure such as Integrated Services Digital Network (ISDN) or Digital Subscriber Line (DSL) and cable modems. [19] He further urges that other technologies such as data compression, Voice over Internet Protocol (VoIP) and other related technologies that have emerged now make the internet a medium for communication and commerce.

1.6.4 International Trade

International trade is the exchange of goods and services between two or more countries. This type of trade gives rise to a world economy, in which prices, or supply and demand affect and are affected by global events (Vasudeva, 2011).[20] The author further argues that, trading globally gives consumers and countries an opportunity to be exposed to goods and services that are not available in their own countries.[21] Global trade allows countries to use their resources – whether labor, technology or capital more efficiently; since countries are endowed with different assets

[17] Ibid., p. 28
[18] Ravi, Vadlamani, *Advances in Banking Technology and Management: Impacts of ICT and CRM (*Hershey, New York: IGI Global, 2007) p. 33.
19 Ravi, Vadlamani, *Advances in Banking Technology and Management: Impacts of ICT and CRM (*Hershey, New York: IGI Global, 2007)
p. 36
[20] Vasudeva P.K., *International Trade*, 1st ed. (New Delhi: Excel Books, 2011) p. 4.
[21] Ibid., p. 4.

and natural resources (land, labor, capital and technology), some may produce the same goods more efficiently and thus sell it more cheaply than other countries.[22] He points out that, for those that cannot produce an item, they can obtain it by trading with another country that can and this is referred to as specialization in international trade; which reduces the opportunity cost hence maximizing the efficiency in acquiring the- goods required. According to Vasudeva, international trade also allows countries to participate in a global economy, encouraging the opportunity of foreign direct investment. According to (Richard & Chrystal, 2011) international trade is necessary to achieve the gains that international specialization makes possible. Trade allows each individual, region, or nation to concentrate on producing those goods and services that it produces relatively efficiently while trading to obtain goods and services that would produce less efficiently than done by others.[23]

They further argue that, both specialization and trade go hand in hand since there is no motivation to achieve the gains from specialization without being able to trade the goods produced for the different goods desired. The term 'gains from trade' encompasses the results of both.[24] They have further discussed the main sources of gains from trade as follows: The first is differences between regions of the world in climate and resource endowment that lead to advantages in producing others.[25] They say that these gains would occur even if each country's cost of production were unchanged by the existence of trade. The second source is the reduction in each country's costs of production that results from the greater production that specialization brings. [26] The third is the international competition that usually promotes more rapid technological change and economic growth than would occur if domestic firms produced solely for a protected home market. [27] In writing about global economic growth, (Vaidya, 2006) argues that, although Great Britain was the first center of the industrial revolution and dominant world economic power, new technologies spread rapidly throughout Western Europe and to the United States.[28] He argues that, due to industrialization, the world trade expanded considerably. In 19th century, the nature and geographical patterns of world trade changed with the export of

[22] Ibid., p. 4.
[23] Richard Lipsey & Chrystal Alec, *Economics* (New York: Oxford University Press Inc., 2011) p. 626
[24] Richard Lipsey & Chrystal Alec, *Economics* (New York: Oxford University Press Inc., 2011) p. 626
[25] Ibid., p. 626
[26] Ibid., p. 626
[27] Ibid., p. 626
[28] Vaidya, Ashish K., Globalization: Encyclopedia of Trade, Labour and Politics, Vol. 1, (Santa Barbara, California: ABC-CLIO, 2006) p. 102

manufactured goods throughout the world and import of raw materials- especially from colonies.[29] The export of textiles became the engine of economic growth followed by heavy manufactured goods such as iron, steel and coal in the second half of the 19th century.[30] He further looks at integration of economy on a global scale which adopted the gold standard system, an open international trading system and economic leadership by Great Britain. The gold system was a monetary system which most major currencies were convertible into gold and could then be exchanged on that basis.[31] The gold standard was adopted by most nations between 1870 and 1910. This system allowed money to cross borders easily, equilibrated processes in international trade as well as removed barriers to international investment and finance.

There was also emergence of multinationals that started to expand their activities over national borders from 1870s. For example, in the late 18th and early 20th centuries the United States emerged as a major industrial nation with the support of multinational enterprises that had production facilities outside the country such as Singer, Ford Motor Company, Standard Oil of New Jersey, Western Electric and International Harvester by 1914. Nonetheless, Great Britain was still the major source of overseas in investments. Vaidya looks at effects the World War I and II had on international trade that ended up devastating and destabilizing the global economy. International trade and movements of people and capital facilitate the flow of ideas and knowledge across borders.[32] The author further argues that, provided that channels of communication remain open, there will be an exchange of ideas and knowledge across borders even in the absence of trade in goods and factors of production. The recent and continuing advances in communications technology are going to be a driving force in fostering deeper global economic integration in the future.[33]

[29] Ibid., p. 102.
[30] Ibid., p. 102.
[31] Ibid., p. 102.
[32] Vaidya, Ashish K., *Globalization: Encyclopedia of Trade, Labour and Politics*, Vol. 1, (Santa Barbara, California: ABC-CLIO, 2006) p. 47.
[33] Ibid., p. 47.

1.7 Summary of gaps in the literature review

After carefully reviewing literature in relation to the subject area, the researcher found some gaps that form the basis of this research project. A few scholars have written about international trade and it is believed to be a major contributor to improving the living standards of citizens globally. There is a huge correlation between international trade and economic growth with the former having always been a catalyst of growth for global economy. However, other scholars have argued that international trade is only beneficial to the developed countries at the expense of the developing or less developed countries. Ostensibly, there are no studies that get into depth of this statement or look at the impact of innovations as a result of international trade in service industry. Having Kenya fall in the latter and being the case study of this research, it prompted the researcher to carry out an in-depth study to ascertain or disapprove that assertion with empirical data.

Internet banking has been viewed as a very beneficial and convenient system to bank customers in accessing their accounts and general information on bank products and services through use of an intelligent device. The knowledge gap in applying or adopting such e-banking technologies especially by their customers and other stakeholders has not seriously been taken into account going by the current literature. Also, the key complementary technological components that facilitate a smooth technological flow of application have not been adopted and implemented with most of their customers in mind. The researcher found a missing gap in the mentioned areas while reviewing the available literature and intends to address.

1.8 Theoretical Framework

Majority of economists scholars argue that world output would increase when the principle of comparative advantage is applied by countries to determine what goods and services they should specialize in producing. A country must specialize in those products that it can produce relatively more efficiently than other countries. David Ricardo, an English economist is associated with this term comparative advantage. Similarly, when this theory is redefined in terms of opportunity cost, then a country will be said to have a comparative advantage in the production of goods and services if they can be produced at a lower opportunity cost.

Higher trade flows of intermediates are correlated with higher productivity. From the OECD study on dynamic gains of trade, finds that a 1% increase in the share of imported intermediated inputs raises the firm's productivity by 0.3%.[34] According to author, the main insight from the theory of comparative advantage is that economic activities differ according to which factors of production they use intensively; and countries differ in their relative endowment of factors of production.[35] Thus, countries with relative abundance of a particular factor have a comparative advantage for sectors that employ this factor intensively. They note that, traditionally, this theory has been applied to primary factors of production, including skilled workers. This study has thus, adapted the comparative advantage theory to apply it in this case.

From the study, Kenya is a country that has access to well-developed services supplier base and it has a comparative advantage in services intensive industries. This theory is important because it has helped to demonstrate how the service industry in Kenya could use its comparative advantage in innovations such as mobile money transfer technology intensively over the other service industries globally.

1.9 Methodology

This section presents the research strategy that has been deployed including the plan of implementation. This sections highlights the types of data collected, sources of the data, the research design deployed, information on study population and selection of the sample size to form part of the study, data collection tools and procedures and data analysis technique.

1.9.1 Types and sources of data

This study has collected both qualitative and quantitative data from both primary and secondary sources: - Primary data was obtained directly from the respondents through the use of questionnaires and interview guide data collection instruments. Secondary data was collected from libraries, online books and other publications which have provided very useful reference materials in understanding the issues surrounding ICT, innovations, banking and international technology transfer.

[34] Lippoldt, Doughlas., *Policy Priorities for International Trade and Jobs* (France: OECD Publishing, 2012) p. 24.
[35] Ibid., p. 184.

1.9.2 Research design

The overall success of research is determined by the choice of research method. Therefore, this study has used both qualitative and quantitative research design methods.

1.9.3 Population

The study population comprises of top 10 out of 43 licensed commercial banks in Kenya. It has been conducted in the major branches of the selected commercial banks in Nairobi due to their proximity, convenience and collection of adequate information of research subject area by the researcher.

1.9.4 Sample size and Sampling techniques

The sample size consists of 100 respondents who have been carefully selected from their both customers and banking staff. The banking staff encompasses: ICT Managers and Customer Relationship Managers from the 10 commercial banks. The respondents have been selected using convenience sampling technique (also known as opportunity or accidental sampling technique). This is a non-probability sampling technique where subjects are selected because of their convenient accessibility and proximity to the researcher.

It involved selection of subjects based on assumptions regarding the population of interest which formed the criteria for selection. This is an ideal method because sampling respondents by using the list of customers of the selected banks is a major challenge. The researcher approached the respondents both inside and outside the banking halls as they carried out their bank activities and after those activities, requested them to participate through answering the questions on the questionnaires.

1.9.5 Data collection instruments

The researcher used unstructured questionnaires and interview guides that contained carefully framed questions to collect the data for this study.

1.9.6 Data collection procedure

In order to carry out this study, the researcher sought permission from the bank managers of the selected banks. The researcher also sought all respondents' consent through face to face and

emails before delivering the questionnaires and interview guides for completion. The bank customers used the questionnaires that were distributed on the different days and had them returned after completion owing to the sampling technique adopted. Majority were seated in the banking halls to complete those questionnaires as they waited to be served while others were met on other strategic locations.

The researcher assisted the bank customers by interpreting the questions to the respondents who had difficulties in comprehending them. For banking staff, they used interview guides which were dispatched in advance through an email and hand-delivery to respective respondents.

1.9.7 Data Analysis methods

The quantitative data was analyzed by use of both Statistical Package for the Social Sciences (SPSS) version 16.0 and Microsoft Excel while the qualitative data used narrative as well as SPSS to explain the meaning of the data findings. The study has used inferential, descriptive et al data methods to analyse the data and show comparison of various study findings.

CHAPTER TWO

OVERVIEW OF THE BANKING SECTOR

2.0 Background of Banking Sector in Kenya

Kenya's banking history can trace its roots in the colonial period. In 1890s, some foreign-owned banks such as British commercial banks began their operations in Kenya. Since independence, Kenya's economic growth has been enhanced through broadening and diversifying the financial system. In 1963, the financial system comprised of nine commercial banks that were foreign owned with largest being Standard Chartered, Barclays, National and Grindlays bank, a number of DFIs and NBFIs. Central Bank of Kenya was later established by the government in the decade that followed independence, several DFIs and three parastatal commercial banks. According to (Brownbridge & Harvey, 1998) the NBFI sector began to expand rapidly during the 1970s, stimulated by differences in the regulatory treatment of banks and NBFIs which created market opportunities for the latter. They further point out that some of the NBFIs were established as affiliates of the existing commercials banks while others by politicians and local business people. These NBFIs are known to have engaged in several forms of financial activity notably lease hiring, merchant banking, hire purchase and mortgage financing etc. They mobilized a high percentage of their funds from interest bearing deposits since they had not been permitted to offer checking accounts. In the 1980s, the locally owned financial institutions hastened in their growth and started to consist of commercial banks with a few being set up by existing NBFIs' owners. Ostensibly, a major financial instability was experienced in the mid-1980s and some financial institutions that were locally owned were shut down after experiencing harsh liquidity problems due to fraud and mismanagement. In 1989, the banking sector experienced several changes after that crisis which included creating the Deposit Protection Fraud (DPF), strengthening of bank supervision, reviewing the bank laws, formation of a government-owned bank, that is, the Consolidated Bank which was mandated to restructure several failed private sector financial institutions. Table 2.1 illustrates the dates of establishment of government-owned, foreign-owned and local private sector banks and NBFIs.

Table 2.1: Dates of establishment of government-owned, foreign-owned and local private sector banks and NBFIs

Commercial banks				
Year	**Foreign-owned**	**Government-owned**	**Local Private Sector**	**Total**
Before 1971	8	2	1	11
1971 – 75	2	0	1	3
1976 – 80	4	0	0	4
1981 - 85	1	0	4	5
1986 - 91	0	1	5	6
NBFIs				
Year	**Foreign-owned**	**Government-owned**	**Local Private Sector**	**Total**
Before 1971	4	0	2	6
1971 – 75	1	3	1	5
1976 – 80	3	0	8	11
1981 – 85	2	0	17	19
1986 - 91	4	0	12	16

Source: reproduced from Kariuki (1993:307)

After independence, parastatal commercial banks were established by the government of Kenya due to the notion that present foreign-owned banks were not serving the credit needs of businesses in Africa. In 1965 and 1968, the Cooperative Bank and National Bank of Kenya were incorporated respectively followed by nationalization of commercial banking operations of Kenya Commercial Bank (previously known as National and Grindlay's Bank) in 1970. In proceeding years (1990), two commercial banks that were government-owned were formed. Due to the failure of some financial institutions in 1980s, Consolidated Bank was established to restructure and take over the operations of some nine private sector banks while Post Office Savings Bank put up a commercial banking affiliate (i.e. Post Bank Credit).

According to (Brownbridge & Harvey, 1998), in 1993, the Post Bank Credit was closed down following a large overdraft that was made to a politically connected borrower who failed to service it, and consequently was used as an outlet to channel funds from the NSSF Fund into campaigning in the 1992 elections. By the end of 1993, two of the largest banks in Kenya, Barclays bank and KCB were holding a total of 22% of commercial bank deposits while the fourth largest bank, NBK had 9.7% of commercial bank deposits.

In Kenya, some of the foreign-owned banks are Standard Chartered Bank, Barclays Bank, Citibank, ABN Amro, various banks from Middle East, other African countries and also Asia. However, the two largest banks of these foreign-owned banks in the country are Barclays and Standard Chartered banks which accounted for 38% of total commercial bank deposits in the year 1993. The other foreign-owned banks are small and in comparison, they jointly accounted for less than 5% of deposits the same year. At least one NBFI subsidiary is found in most of these banks. The two largest foreign owned banks (Standard Chartered and Barclays Banks) deal in trade financing, corporate and retail banking as opposed to the other remaining smaller foreign-owned banks that purely operate in niche markets. The former has had their lending concentrated largely on the most creditworthy corporate customers such as larger local companies and MNCs. According to (Brownbridge & Harvey, 1998), with presence of a strong private sector in Kenya which contains a large MNC presence, combined with limited competition in loan markets, has subsequently enabled them to avoid having to lend to less credit-worthy customers. Very little credit has been extended to cooperatives and parastatals among others. The lending by these giant foreign-banks in Kenya is fully secured with realizable collateral and has been primarily used to finance working capital either in short or medium terms. There are very strong internal controls that have been instituted by these two giant foreign banks (Standard Chartered and Barclays banks) in order to reduce potentially risky lending. In mid-1980s, Barclays bank expanded its programmes in the rural areas with an intention to mobilize rural deposits. This expansion of its rural branches (together with what Kenya Commercial Bank had established) has been gainful since it has assisted the bank to mobilize low-cost rural deposits and channel them into remunerative investments and loans mainly in the urban areas. Since the early 1990s, Barclays bank has generated huge profits.

There are some notable advantages that the researcher noted from these two giant foreign banks have had over other Kenyan banks which permitted them to lend mainly to prime corporate customers and also mobilize cheap deposits, they include: securing business from the MNCs owing to their international network, their countrywide branch network which is only matched by Kenya Commercial Bank and also their reputation in high security for deposits among others. They have also created employment in the country both in rural and urban areas.

The local banks and NBFIs have thrived in Kenya. These local banks are mainly private sector banks owned by individuals or families. In 1994, there were 17 locally owned commercial banks and 35 NBFIs in operation and they recorded about 25% of commercial bank deposits and an estimate of 50% of NBFI deposits. According to (Brownbridge & Harvey, 1998), these local financial institutions can be classified into three categories according to ownership: political banks (which have included prominent politicians among their shareholders), independent (of politicians) Asian-owned and independent African-owned financial institutions. The Asian-owned financial institutions have experienced a rapid growth in recent years some owing to political connections in the country. The local financial institutions have had a tremendous growth which is attributed to various factors such as: supplying the loans to businesses that were excluded by the established banks who have been failing to provide sufficient credit facilities to them, the political connections which has been used to acquire public sector deposits, providing owners of local financial institutions by their own communities with lending opportunities hence having a competitive advantage over those established banks, provision of opportunities for the NBFIs to undertake lease hire and hire purchase businesses which had been protected from competition commercial banks as well as provided with a competitive advantage which included charging of higher interest rates among others.

Some differences between local financial institutions and the larger banks include: paying of higher interest rates to attract term deposits and savings, the lending in local financial institutions is to small and medium scale businesses, local banks provide short term loans and overdrafts with letters of credit, local banks have their deposit base containing a lower proportion of current accounts as opposed to those in giant banks, the finance asset purchase is common in local financial institutions particularly mortgages, hire purchase and lease hiring.

The researcher notes that local owned banks have provided quicker and more flexible services to their customers particularly on loan applications as opposed to the established banks.

The financial sector by early 1990s included commercial banks, development finance institutions (DFIs), non-bank financial institutions (NBFIs), stock exchange and insurance companies. In 2011, the Kenya banking sector comprised of 43 commercial banks, 1 mortgage finance company, 6 deposit taking microfinance institutions, 2 credit reference bureaus, 3 representative offices and 124 foreign exchange bureaus (CBK, 2011). Currently the Kenya banking sector consists of the Central Bank of Kenya, 24 commercial banks, and 6 development finance institutions. The Central Bank of Kenya, established in 1966, is the principal financial institution in Kenya. It regulates the Kenyan monetary and banking system, issues bank notes, administers exchange control, and provides banking and other services to the government. Additionally, the Central Bank regulates commercial bank liquidity and interest rates as a mechanism of government monetary policy. The commercial banks have over 400 service centers throughout the country. They offer a wide range of services, including short-term financing and letters of credit. Occasionally, commercial banks offer medium-term financing. Additionally, commercial banks offer a number of donor-aided term finance windows and offshore lines of credit to support projects.

The commercial banking sector is dominated by four large banks. These banks with their American correspondents are the National Bank of Kenya (Manufacturers Hanover Trust Company and Morgan Guarantee Trust Company), Kenya Commercial Bank (Bankers' Trust, Manufacturers Hanover Trust Company, Chase Manhattan, and Citibank), Barclay's Bank (Barclay's Bank of New York), and Standard Chartered Bank (Standard Chartered Bank of New York). The National Bank of Kenya and the Kenya Commercial Bank are government owned. Private foreign investment in Kenya is governed by Kenya's Foreign Investment Protection Act (FIPA). The government requires foreign investors to apply for a Certificate of Approved Enterprise from the Treasury, which allows them to repatriate capital and profits. Kenya law does not contain specific provisions for franchising or licensing. The primary consideration in either arrangement is the formalization of a remittance procedure for any fees, royalties etc, to the franchisor or licensor. Such arrangements require prior approval of the Central Bank.

Kenya is a signatory of the Settlement of Investment Disputes Between States and Nationals of Other States, to which the United States is a party. An investment guarantee agreement is in force between the United States and Kenya. There are no restrictions on the right of foreign nationals to acquire and own business entities in Kenya. Most foreign companies are urged to have Kenyan participation in the new business. Local financial participation increases Kenyan support and provides the benefits of local knowledge and experience. Foreign investors have limited access to domestic credit markets and are encouraged to seek credit from outside sources. All foreign firms are permitted to borrow locally up to the amounts required to pay customs duty on imported capital equipment. Foreign investors are also permitted limited credit from local financial institutions based on the amount of equity capital.

2.1 Growth and performance of Kenyan banks

Banking industry in Kenya has undergone implausible changes in the last two decades (1990-2010). Misati, Njoroge, Kamau and Ouma (2010) posited that financial products have increased, activities and organizational performances have also improved and the overall efficiency of the financial system has increased (CBK 2010). Commercial banks branch network has grown from 530 in 1999 to 1,102 branches by June 2011, ATMs increased from 262 to 2,021, number of deposit accounts from about 1million to 16,673; 12.8million staff to 28,846 staff over the same period (CBK, 2011). As a result, the banking sector productivity score continued to advance where the staff to customers' ratio was 1:444 in June 2011 compared to 1:60 in 1999. Total assets increased from Ksh. 387,371 million in December 1999 to Ksh. 1.9 trillion in June 2011 while customer deposits from Ksh. 235 billion to Ksh. 1.4 trillion in June 2011 (CBK, 2011).

The financial sector development in Kenya can be reviewed in three phases (Misati, Njoroge, Kamau and Ouma, 2010). The first phase is the 1970s to early 1980s. During this time, the financial sector was largely dominated by the banking sector, which was characterized by financial repression. The government played a crucially important role of allocating credit to investments by utilizing direct instruments of controls such as interest rate, exchange rate controls and allocation of credit to priority sectors alongside other government restrictive measures (Misati et al., 2010).

The second phase began with the implementation of Structural Adjustment Programmes (SAPs) and liberalization policies in the late 1980s and early 1990s. Over this period, relaxation of the interest rate, exchange rate and the capital accounts controls were witnessed. The financial sector reforms were meant to bring low interest rates, increase availability of financial resources through increased savings, enhance efficiency in credit allocation and increase investments. Liberalization of the financial sector was also meant to encourage usage of indirect instruments for monetary policy formulation. The third phase which is the main focus of this study is the era of financial innovation and emerging financial instruments. The period witnessed emergence of new products such as Islamic banking, automatic teller machines (ATMs), plastic money and electronic-money (e-money) among others within the banking sector (Misati et al., 2010).

Banking industry in Kenya is governed by the Companies Act, the Banking Act, the Central Bank of Kenya Act and other various prudential guidelines issued by the Central Bank of Kenya (CBK). All of the policies and regulations for the entire banking industry center on lifting the controls towards the management and equitable services (Pricewaterhouse Coopers, 2008). World Economic Forum (WEF) is an independent international organization committed to improving the state of the world by engaging business, political, academic and other leaders of society to shape global, regional and industry agendas. The World Economic Forum's Centre for Global Competitiveness and Performance through its Global Competitiveness Report (GCR) and report series, aims to mirror the business operating 10 environment and competitiveness of over 140 economies worldwide. The report series identify advantages as well as impediments to national growth thereby offering a unique benchmarking tool to the public and private sectors as well as academia and civil society (World Economic Forum, 2011). The Global Competitiveness Report (GCR) remains the flagship publication within the Forum's Centre for Global Competitiveness and Performance. The GCR is based on 12 pillars of competitiveness, providing a comprehensive picture of the competitiveness landscape in countries around the world at all stages of development. The pillars are: institutions, infrastructure, macroeconomic environment, health and primary education, higher education and training, goods market efficiency, labour market efficiency, financial market development, technological readiness, market size, business sophistication, and innovation (WEF, 2011).

According to the Global Competitiveness Index (GCI) report of 2011-2012, Kenya ranked 102 overall of the 142 countries ranked with an overall score of 3.8 out of the maximum of 7 putting Kenya among the bottom 50 in terms of competitiveness in the world. Kenya's innovative capacity is ranked 52nd, with high company spending on Research and Development (R&D) and good scientific research institutions collaborating well with the business sector in research activities. The economy is also supported by financial markets that are well developed by international standards (26th position) indicating potential for growth of the Kenyan banking industry and a relatively efficient labor market (37th position) (WEF, 2011). The banking industry has been earmarked as a key pillar to the achievement of vision 2030 (a long-term strategy to achieve sustainable growth by year 2030) through increased savings, encouragement of Foreign Direct Investment (FDI), safeguarding the economy from external shocks as well as propelling Kenya to become a leading financial centre in Eastern and Southern Africa. Within the Medium Term Plan (2008-2012) under vision 2030, some of the target areas include development of a safe and reliable payments system that will ensure smooth transfer and settlement of funds between customers and banks as well as between banks. Towards this end, the use of mobile phone networks, internet, payment cards, operational resilience and security would be pursued in order to increase trust, integrity and confidence in the ICT based payment systems (Government of Kenya, 2008). In comparison with other East African economies, Kenya's banking sector has for many years been credited for its size and diversification. Private credit to GDP, a standard indicator of financial development, was 23.7% in 2008, compared to a median of 12.3% for Sub-Saharan Africa. Based on the same indicator Kenya is ahead of Tanzania which has 12.3% and Uganda with 7.2% (Beck, Demirguc-Kunt and Levine, 2009).

2.2 Effects of technology in banks

The banking industry in Kenya comprises of 46 registered commercial banks, 15 microfinance institutions and 109 forex bureaus by the end of December 2008.The banks are under Kenya Banking Association (KBA) which serve as a forum that addresses issues that affect the banks in Kenya and work as a lobby for the local banking industry.

Some of the major forces behind shaping the structure of the industry and competitive advantage are increased competition from new market entrants, competitions from non-traditional sources

like cooperatives and micro-finance institutions, changes in customer tastes, the CBK (amendment) Act 2000 (Donde bill) and changes in technology (Internet Banking, Short Messaging Services (SMS) banking. The core of banking business is challenged by a combination of pressure which operates in the industry. A dominant pressure develops from new technology with respect to information, trading and delivery of financial services. According to industrial history, development of new technology has a major impact on any industry. Technology affects the core of the banking business information processing and delivery which makes banking to be no different from the other industries. Banking and financial services industries transformation results largely from innovation and what follows from it (Cooper, 1998). In some countries, the development of electronic banking has enabled foreign banks to enter relatively closed domestic retail banking markets. It is perceived that introduction of new technology and alternative delivery systems in many countries result in terminating duties of staff and closure of branches. Similarly, due to stiff competition and traditional businesses, banks have expanded their horizon and incorporated unit trusts, life assurance, insurance just to mention a few. Due to the major structural changes in the financial systems, these trends are now emerging. Several factors contributed to emergence of e-banking notably: globalization, advances in ICT, de-regulation of the industry and also customer demands.

2.3 Effects of FDI and MNCs in Kenya

Kenya is one of the largest recipients of Foreign Direct Investment (FDI) in Africa with these inflows growing since 2010. Most of the FDI inflows can be attributed to large privatizations in - telecommunications which accounted to US$ 729 million in 2007 and those of railways that recorded US$ 404 million between 2005 - 2010. Majority of sectors have attracted FDI such as banking and tourism among others. The major investors are from EU, US, Japan, China and India. Kenya's presence as an outward investor has also been felt in EAC countries and also in the region. In 2009, the outward FDI accounted for US$ 46 million. The banking and telecommunications sectors are among those contributing to outward FDI in the region.

According to (Hansen, 2011), close direct and indirect interaction between MNCs and domestic firms is crucial if FDI is to have deep and lasting positive effects on host countries. MNCs have played a major role in most emerging economies through transfer of the know-how and skills,

technology, availing of various products and services of high quality and also cheaper than those of host countries, ease of access to export markets and sharpening competition that has contributed to less expensive products and services to consumers. One of the most striking aspects of FDI in recent decades is the growing FDI in emerging economies, rising from a level of 20-30% of all FDI flows in the early 1990s to 30-40% in the mid 2000s.[36]

Rugraff and Hansen continue to argue that in most advanced Asian countries, there is rise in efficiency and strategic asset-seeking investments where most of the FDI is equated to acquisitions which reflect that emerging economies are constructing very advanced local industries that are seen to attract investment targets for most MNCs. One of the main strategies that MNCs have shifted to in their competition is changing to global arena as opposed to their earlier national and regional arenas and this has enabled them to expand more of their activities in those countries. Advanced technology through various communication channels and reduction in transportation costs has helped in speeding up these activities globally. Through many packages that come with FDI such as offering linkages and market opportunities, skills, cheaper products, better technology among others, the local firms that develop great connections with foreign investors may benefit from immense opportunities to expand activities as both subcontractors and suppliers to most of the MNCs present in host countries. Other benefits of having this exposure would lead the local firms upgrading to more advanced standards, and also MNCs could apply their financial muscle to lobby for development of advanced infrastructure and bylaw in the host country. In foreign countries, a MNC is particularly incited to secure its knowledge, management and information assets due to the fact its competitive advantage is directly linked to its capacity to limit diffusion to local competitors.[37] As pointed out by Rugraff and Hansen, the internationalization of IT and other business services is seen to offer various new opportunities for incorporation of firms in most of the emerging economies- into the global-economy and this has been demonstrated by the progression of Indian IT and business Process Outsourcing (BPO) firms. On the flip side, they argue that some local firms may be disadvantaged from diffusing technology. The foreign high-technology industries are known to have a higher spillover potential than the low-technology firms and may avert their technology

[36] Eric Rugraff & Michael W. Hansen, *Multinational Corporations and Local Firms in Emerging Economies* (Amsterdam University Press, 2011) p. 14
[37] Ibid., p. 17

from leaking over to those in countries with weak intellectual property rights (a good example is in the case of licencing agreements). This as a result, they feel may not absorb advanced technologies and information particularly in less developed and developing countries. From this research, in Kenya, most of the MNCs in the financial sector have had a positive and multiplier effect in the country and have significantly boosted her economic growth in the service industry. The government has been actively involved in attracting more investors in the country. Several MoUs have been signed between the Kenya government and other countries, country's private sector investors and those of other countries. Some of the notable benefits to Kenya are; creating employment to the locals, technology transfer, improving the reputation of the country, provided a valuable source of revenue in the country, provided wider choice of products with lower prices than imported substitutes, and has helped improve the country's balance of payments through inward investment among others.

2.4 FINDINGS

2.4.1 Rate of Respondents

The response rate was conducted to determine the actual number of the respondents who actively participated in the research by filling and submitting the questionnaires and taking part in the interviews to completion. A total number of eighty (80) self-administered questionnaires were distributed to eighty (80) selected customers from the top ten (10) designated commercial banks, all of which were dully filled and submitted.

Twenty (20) researcher guided interviews were conducted in the ten designated banks involving two (2) employees each – Customer Relations Manager and ICT Manager; out of which sixteen (16) interviewees participated to completion, three (3) participated half way and one (1) completely declined to be interviewed.

The response rate was considered adequate for this study as asserted by Mugenda and Mugenda's (2003) that considers for a response rate of above 50% as adequate.

Table 2.2: Statistics of the respondents (Bank staff)

Category	Frequency	Percentage (%)
Completed interviews	16	80
Interviews not completed	3	15
Declined interviews	1	5

Source: compiled from this Researcher's data

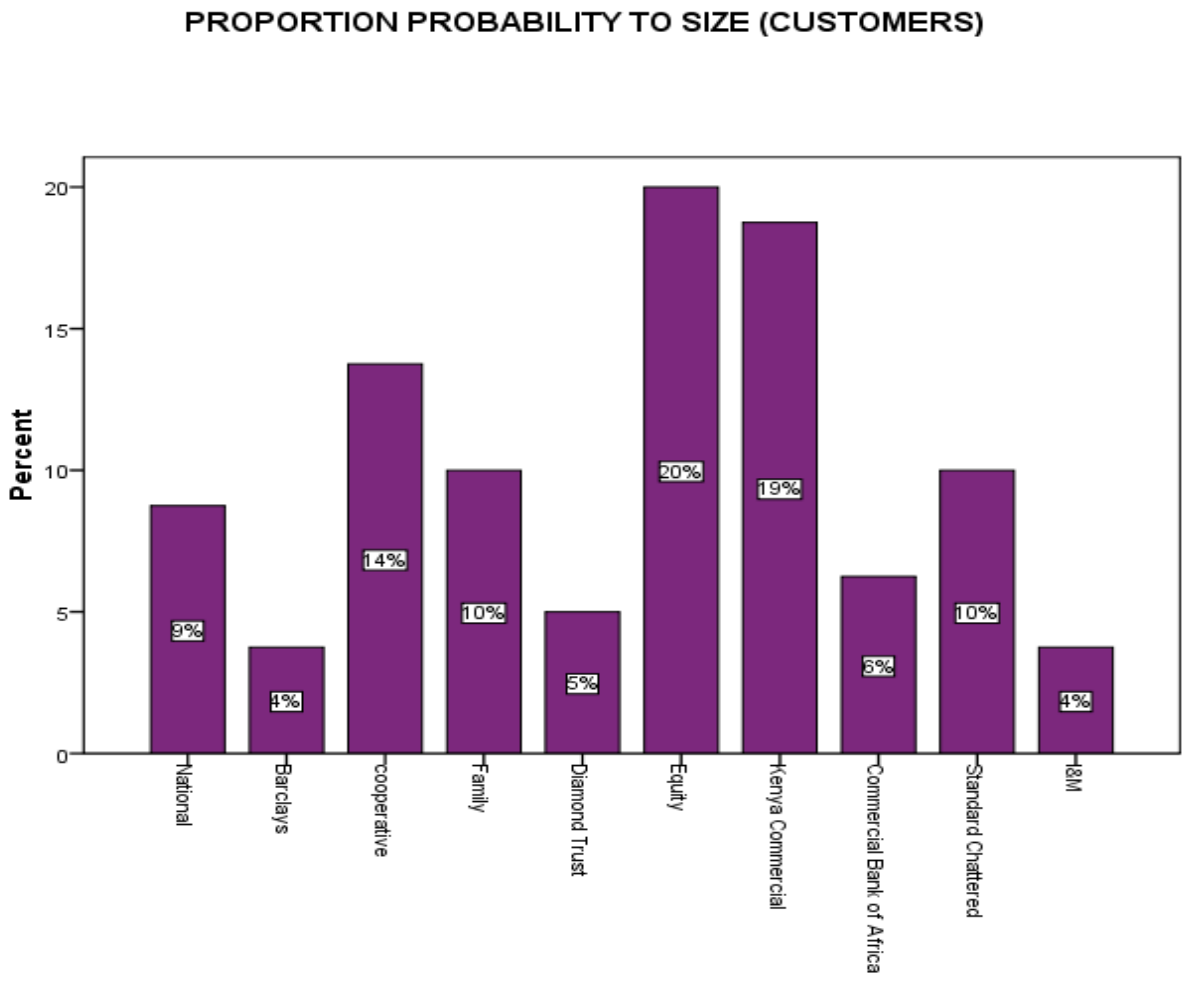
Table 2.2 indicates how the selected banking staff participated in the study. The total numbers of the respondents who were successfully interviewed was 80% while those that didn't complete the interview were 15% and 5% declined the interviews. Based on the analysis it was concluded that the response was satisfactory enough to partake the study.

2.4.2 Banks involved in the study versus proportion of respondents (customers) selected

Figure 2.3 shows the ten (10) banks in Kenya included in the study and the distribution of selected respondents across each of the banks. The survey targeted the top ranking commercial banks in Kenya, and customers were selected based on probability proportion to size (PPS) of the customer base of each of the banks so as to make the selection more representative.

Through application of PPS, Equity Bank had the highest number of respondents (20%), followed by Kenya Commercial Bank with 19%, Cooperative Bank was third with 14%, fourth and fifth place was a tie of 10% between Standard Chartered and Family Bank, sixth place was National Bank with a respondent proportion of 9%, seventh place was Commercial Bank of Africa with a respondent proportion of 6%, eighth place was Diamond Trust Bank- with 5% respondent proportion and lastly the ninth and tenth place was I&M and Barclays banks with a respondent proportion of 4% each.

Figure 2.3 Statistics of the customers (Banks vs Customers selected using PPS)



Source: compiled from this Researcher's data

CHAPTER THREE

TECHNOLOGICAL INNOVATIONS ADOPTED BY KENYA'S BANKING SECTOR AND CUSTOMER USAGE

3.0 Introduction

Thornton and White (2001), who examined customer orientations and usage of financial distribution channels in the Australian financial industry, found that more recently most financial institutions, faced with competitive pressure after deregulation in 1983, have rethought their strategies to take full advantage of internet, cell phone and other modern methods of conducting business. The use of internet has enabled the banks to reach a huge number of their customers at a relatively low cost as opposed to the earlier dial up PC banking. The latter has been actively used by several financial institutions for over 20 years. Most internet users across the globe prefer conducting their financial transactions via online platform. Some use their personal computer and mobile phone technology which is becoming very common in the developing countries such as Kenya. The continuing search for greater standards can be reflected by the multiplicity of online payment methods in the industry. Diversification of online payments devices can be seen by a shift from Personal Computers to an increase use of internet enabled television sets and mobile phone devices.

3.1 Technological innovation and its significance

It is very important to have IT advancements in the banking industry. According to (Baker, 1999), technology has become increasingly important particularly in the evolution of bank retail delivery systems and development of new electronic retail products. He further says that banks are considerably increasing their investments in technology. There is no bank that wants to be left behind in applying technology hence a strong competitive pressure being felt in the banks. This sense of urgency could lead to heightened technology related risk exposures for banks if they fail to implement appropriate technology risk management practices.[38]

[38] Richard H. Baker, Technology and Banking: Congressional Hearing (Washington D.C. DIANE Publishing, 1999) p. 110

The banking sector in Kenya has greatly embraced innovations and this is reflected by development and implementation of products, ideas, systems and technologies. There has been transformation as a result of these innovations which have not only extended to financial services available and the manner in which they are provided but are also seen in portfolios. The notable innovations include new technological applications (e.g. ATMs, PoS, SWIFT, use of computers in problem solving, in-home banking, virtual banking etc), new instruments (they include rising rate notes, variable-rate mortgages, CDs etc), new institutional forms (e.g. money market mutual funds, bank holding companies), new methods for supplying services through related financial arrangements and joint ventures (e.g. shared EFT networks, cash management and deposit sweep accounts).

3.2 Technological innovations used by Kenya banks

a) Automated Teller Machines

According to (Singh & Dutta, 2013), an "Automated Teller Machine is a computerized machine that provides the bank customers with the facility of accessing their accounts for dispensing cash and to carry out other financial and non-financial transactions without the need to actually visit their banks' branch".

The Oxford dictionary also defines an ATM as "a machine that dispenses cash or performs other banking services when an account holder inserts a bank card". (https://en.oxforddictionaries.com). This device is activated by the transmission of a code through a keyboard or by a magnetically encoded card.

ATMs emerged in 1970s and diffused rapidly in the 1980s; they were aimed to provide customers with a round the clock access to funds. For European bankers, they were interested in rising labour costs and increasing unionization hence thought of getting engineers who could develop a solution to distribute cash after-hours.

This plan came to reality when prototypes of today's ATM were installed by two British banks followed by Swedish savings banks who had also invented a similar technology known as Bankomat. This gave rise to building of ATMs in Japan, U.S. and other countries across the globe. During the early period, accessibility was very difficult since the cards were rare and the process of obtaining them was tortuous. Bank halls had long queues that took customers a long time to be served. Ostensibly, when ATMs emerged, the customers who could use them were only those who held either savings or current accounts with those particular banks via the banks' propriety ATM network. ATMs were few and only found in major towns. Today most banks have entered into bilateral and multilateral arrangements with other banks to have inter-bank ATM network which has boosted the usage of ATMs as a delivery channel. These banks are spreading the ATM fixed costs over transactions initiated by different banks' customers; to take advantage of a shared network for convenience of ATM use by their customers to enable them carry out banking transactions in more locations as opposed to a propriety network. This has been possible by modifying their cards to become compatible with the shared network machines.

ATMs awareness level has emerged as one of the most popular compared to other banking services. The ATMs were originally used for cash withdrawals but later and owing to technology advancements, they are able to provide variety of services such as cash deposits, bill payments, cheque deposit, PIN change to enhance security, allowing funds transfer from one account to another, relaying balance enquiry information, credit card payment, provides account information, statement enquiry, mini/short statements, cheque book request, loan account inquiry, utility bill payment, insurance premium payment among others. Most banks have deployed ATMs to increase their reach and have targeted locations with a huge customer base. ATMs are installed both onsite (*these are ATMs installed within bank branch premises*) and offsite (*these are ATMs installed away from the bank branch premises*). They are placed in very strategic places for ease of access by their customers such as next to the banks' premises, filling stations, railway stations, shopping malls, institutions, airports, hospitals, hotels etc. Currently, most banks have increased their branches and installed ATMs in various locations in the country for convenience to their customers.

Banks started by encouraging their customers to adopt the technology by not charging any fees through use of services that could be performed by the ATMs. This was to encourage customers

from using teller services that an ATM would perform and introduced a 'human teller fees' to those customers who were not embracing the technology. A huge profit growth was recorded by all the banks that embraced ATM technology that led to their expansion. Banks have deployed ATMs making the technology relevance more crucial. The consolidation of banks has made majority to afford deployment of these ATMs and become part of a shared network. Through adoption of this technology by banks, there have been several benefits in that sector notably: quicker and efficient services since one does not need to wait in queues in the banking premises, flexibility in withdrawals, high reduction of crowds at bank counters and pressure on bank employees, improved banks' image through creating a competent market, accurate records and improved customer services, privacy in transactions, the market penetration is increased, provides an alternative to extended hours, free from errors etc. Similarly, the work has been simplified and made more interesting and easier.

b) Point-of-Sale (PoS)

"Point-of-Sale (PoS) is a process of recording transactions in an electronic cash register in an establishment".[39] The PoS System's software can run on all types of machines with different operating systems. Its original make was developed in 1978 on an Apple computer by Gene Moshel from New York. A Point-of-Sale Transaction can be defined as an entire transfer of funds that can be achieved by electronically entering transaction data into an electronic payment network and transmitting the payment information to a database in a depository computer of an institution. PoS Terminals are defined as electronic devices used to verify and process both debit and credit card transactions and are integrated with a Point of Sale System, a computerized network that is particularly operated by a main computer and connected to various checkout-terminals. Unlike their predecessors, the current PoS terminals are more reliable, quicker and convenient.

The PoS terminals were introduced in 1979 the period Visa presented a bulky electronic data capturing terminal, a credit card terminal that significantly reduced the time required to process a

[39] Kanhaiya Singh; Vinay Dutta, *Commercial Bank Management,* (New Delhi, India: McGraw Hill Education (India) Private Limited, 2013) p. 117.

credit card. The technology was later advanced and took off in 2000 with MONEXgroup taking the lead at offering the advanced payment technology.

PoS terminal comes with its personal computer, application-specific programs, other accessories for specific environment. Customers can easily access the PoS terminals that have been deployed in a wider manner by various banks in retail establishments. The merits that come with PoS terminal include: response time for billing is reduced, since money is credited directly to respective current accounts of dealers the hurdles of cash management are eliminated, any risk of fake currency and counterfeit notes is completely eliminated, there is easier tax compilation as well as convincing tax authorities, minimizes credit risks since the machines promptly debit the customer's account, there is easy transfer facility of funds, increased sales etc. The records and other transactions of PoS can be maintained in a soft copy and in an effective manner. This computerized point of sale system can be used in several ways such as: processing debit and credit cards, generating reports, tracking and recording customer orders, invoicing and receipting, maintaining accounts receivable, managing inventory and also connecting to other systems available in the network. This system is also web-enabled and can be accessed remotely. Most banks have authorized different dealers especially in the case of credit cards and made arrangements for swapping cards and allow customers to make the transactions.

c) SWIFT System (Society for Worldwide Interbank Financial Telecommunication)

Nowadays, most bank transfers are processed via an internal bank network for international payments and messages through SWIFT system in which more than 8,000 financial-institutions around the world participate (Grath, 2005, 2008). He further points out that this network is cooperatively owned by the participating banks, which he argues have created a low-cost, secure and very effective internal communication system for both payments and messages.

This system has enabled bank transfers between various countries and banks to be completed quicker as opposed to the past. Usually, instructions are fed into the system by the buyer's bank and reflect at seller's chosen bank two banking days later and then to the seller's the following day or according to local practice. For express payments, they attract a higher fee since they are processed at a higher speed or faster than the normal time. An address code system is developed

by SWIFT, the Bank Identifier Code (BIC) that consists of 8 characters. The code is a unique address which identifies the bank to be involved in the transaction, location and the country. With correct and necessary information given to the receiving banks, the process is done faster and at a reasonable fee unlike the manual system which applies when incomplete and incorrect information is provided to the bank hence attracting a higher fee.

d) Mobile banking

This is also referred to as M-Banking where bank customers use their mobile phones to undertake banking transactions by logging on to a bank's website at any time and place. These transactions involve withdrawals, deposits, making payments, mobile airtime top up, transfer of funds from and to accounts etc. The bank customers also access their accounts for non-monetary transactions such as checking their account information and to seek other support services such as locating their bank branches and ATMs. Since the introduction of mobile phones, the service providers have improved the coverage of the mobile phone networks which has led to a hasty growth in number of users, thus making this channel a very crucial platform for extending banking services to customers. Both smartphone and basic phone users can assess this service. In Kenya, the M-banking services are available to mobile phone users of the following service providers: Safaricom, Airtel, Orange, Tangaza pesa, Mobikash and also Equity Bank.

In 2014, statistics from Central Bank of Kenya (CBK) showed that the value of transactions that were conducted via mobile phones rose to 24.7% to Kshs. 2.4 trillion ($26.4billion) compared to 2013 which was Kshs. 1.9 trillion ($20.9billion).

This study found that majority of the banks in Kenya have employed this technology making it easier to access their bank accounts via their mobile phones to transact a number of businesses at their comfort zone. Some of the notable Kenya banks using the technology include: Cooperative Bank of Kenya, Barclays Bank of Kenya, I & M Bank, National Bank of Kenya, Standard Chartered Bank Kenya, NIC Bank, Bank of Africa, Kenya Commercial Bank, Diamond Trust Bank Kenya, CFC Stanbic Bank Kenya, Equity Bank Ltd Kenya, Consolidated Bank of Kenya, Commercial Bank of Africa, GT Bank Kenya etc as well as the micro-finance institutions.

e) **RTGS - Real Time Gross Settlement**

It is an automated payment system that transfers cash or securities between participants in real time. In Kenya, it is also known as the **Kenya Electronic Payments and Settlement System** which was launched on July 2005 by the Central Bank of Kenya with an aim to modernize Kenya's payment system in line with global trends. It is the fastest money transfer system via banking networks and the payments in this system are generally credit transactions. In other words, reserve banks of countries offer the RTGS service to process high value cash transactions and done safely between two accounts. The payment is final and irrevocable once the instructions on payment are successfully executed from a sender's account to a receiver's account at the Central Bank of Kenya. For securities settlement, all securities are exchanged between two parties. The security settlement systems also handle repayments, dividend and interests from those issuing to investors. The RTGS has several advantages such as: ensuring finality and irrevocability of payments, eliminates settlement risk by minimizing payment exposure, it's efficient and fast since transactions are on a real time basis, the investors and general public's confidence is boosted, commercial banks are able to manage their liquidity and their settlement accounts at CBK among others.

f) Phone banking / Tele-banking

The use of this technology provides bank customers with 24-hour service to access their accounts from anywhere at any time of the day through the touch tone mobile phone or a telephone and is deemed safe and secure.

The services offered through this technology include: Account opening by customers over the phone, enables customers to know the current foreign exchange /interest rates on deposits, customers can pay their utility bills through phone banking, payments of single or multiple cheques can be stopped any time of the day, enables transfer of funds from one account to another, customers are able to make enquiries via phone, provides updated details on bank products and services by talking to respective phone bankers, provides mini statement of the last 15 transactions, enables one to request for an account statement from anywhere and anytime across the globe, provides real time account balance details for multiple accounts that are linked to the same bank customer identification number, customers can place an order for issuing necessities such as cheque book as well as demand draft etc. The above tele-banking services can

easily be availed by either using a Telephone Operator or through an automated phone-banking system that enables bank customers to access services on 24-hour system known as Interactive Voice Response System (IVR).

g) MPesa

MPesa (M stands for 'mobile' and Pesa for 'money') has been one of the innovations that has demonstrated a different picture of Africa continent. It is an indication of how Africa is generating innovations that are relevant to international market. The Mpesa is a product of Kenya which was launched as a mobile-based money-transfer service as a non-profit project in 2007 by the local mobile service provider Safaricom; Kenya's leading mobile provider in partnership with its British shareholder Vodafone. This technology enables people to transfer money through their mobile phones and is used by over 40 per cent of Kenya's population. The MPesa's platform was extended to most of the banks in 2011 to incorporate mobile banking services to allow payments of bills and money storage.

The service is accessed through one's mobile phone and allows ease transfer of funds between MPesa and one's bank at any given time. To access the service, one has to register for mobile banking with their respective banks and obtain a short code that allows them to transfer money from their bank accounts to individual MPesa accounts or to other people.

This technology saves on time, travel costs to one's bank, and minimizes the cash handling risks among others. MPesa has boosted Kenya's economy and transactions accounts for about 30 per cent of her GDP. Over 15 million users out of a population of 44 million persons in Kenya have subscribed to this MPesa service and use their mobile phones to make several transactions in real time. Other countries in the world have also adopted this technology such as Tanzania, South Africa, India, Afganistan, Eastern Europe, Lesotho, Mozambique among others. MPesa International Money Transfer has enabled people to send money directly to mobile phones from abroad to those in Kenya. Transactions are quick and instant and confirmations are sent to both sender and receiver's phones from MPesa.

h) Internet banking

This is a web-based service that allows any bank's authorized customers to execute bank related transactions through the internet without having to visit the bank. (Singh & Dutta, 2013). There has been a day to day massive increase in performance owing to increase in technology usage in the Kenya's banking sector. Internet banking has become a very essential part of contemporary day banking services.

There are various services/facilities offered by the banks that internet banking has enabled bank customers to assess through internet the same way as a customer who is physically in the bank. These services include: transfer of funds to other accounts, notification of change of address that allows update of records especially on lost or stolen ATM card, enables one to create fixed deposit or recurring deposit online, secures interactive messaging with staff, request services (stop payment cheque, request cheque book, making loan requests, demand draft etc), viewing of bank account details (loan account details, user account balance, credit card account details, download statements online etc), updated information (updated information on banking services and products, updating foreign exchange currency rates etc), value–added services (pay any visa credit card bills, pay utility bills, register for e-statement and SMS banking, create virtual cards, recharge mobile etc).

i) Core Banking Solutions (CBS)

This is a platform that enables the entire bank's operations to be run and controlled from a centralized hub. A customer profile database is created through CBS which has enabled banks to gain a competitive advantage through cross selling opportunities. It has revolutionized the banking sector by offering a solution where the banks can comfortably offer a multitude of customer-centric services round the clock from one location, supporting both retail and corporate banking activities among others. The private sector banks were first to implement CBS and the public sector banks followed suit following the success of the former. CBS in banks has several benefits namely: it centralizes the back-end reporting and processes, there is availability of accurate data and better use of infrastructure available, it offers faster and efficient customer

service, brings about standardisation of process within the banks, reduces the operational costs through space and manpower saving etc.

j) Electronic Funds Transfer (EFT)

This technology allows bank account holders to transfer their funds electronically to another account holder in another bank. It was introduced in the late 1990s. According to (Targowski, 1996), Electronic Funds Transfer System (EFTS) is a tool used to communicate, transport, integrate and share information among financial institutions and their customers. He points out that this technology replaces paper money with electronic money which is processed by computers and their networks.

EFT is mostly used for credit transfers which include payroll payments that are deposited into bank account of an employee and also, it is used for debit transfers particularly mortgage payments among others. The transfer of funds in EFT is initiated through an electronic terminal such as ATM, Point-of-Sale, credit card and Fedwire transactions. The transfer takes less than one day after the scheduled payment date. The study found out some of the EFT benefits which include: It is faster, there is a great security of funds hence it is safe and secure, the administrative costs are highly reduced, the bookkeeping is quite simplified and there is increase efficiency.

3.3 Technology adoption and benefits

Banks have increased their presence online and with emergence of SMS and internet banking; majority have had to rework their IT strategies in competitive markets. The first bank to allow its customers access their account balances through an online platform was Barclays Bank of Kenya when internet era started in the banking industry.

From this research, both customers and the bank staff interviewed were in agreement that adoption and diffusion of technologies has significant benefits in the banking sector. The notable

ones included: real time information, round the clock access of one's account, access to global market through integration of banking technology, improvement of customer service, increase in bank revenues and low value-added transaction costs such as balance inquiries, account transfer, payment of bills among others. Below is a presentation of data indicating the characteristics of various respondents that was used by the researcher.

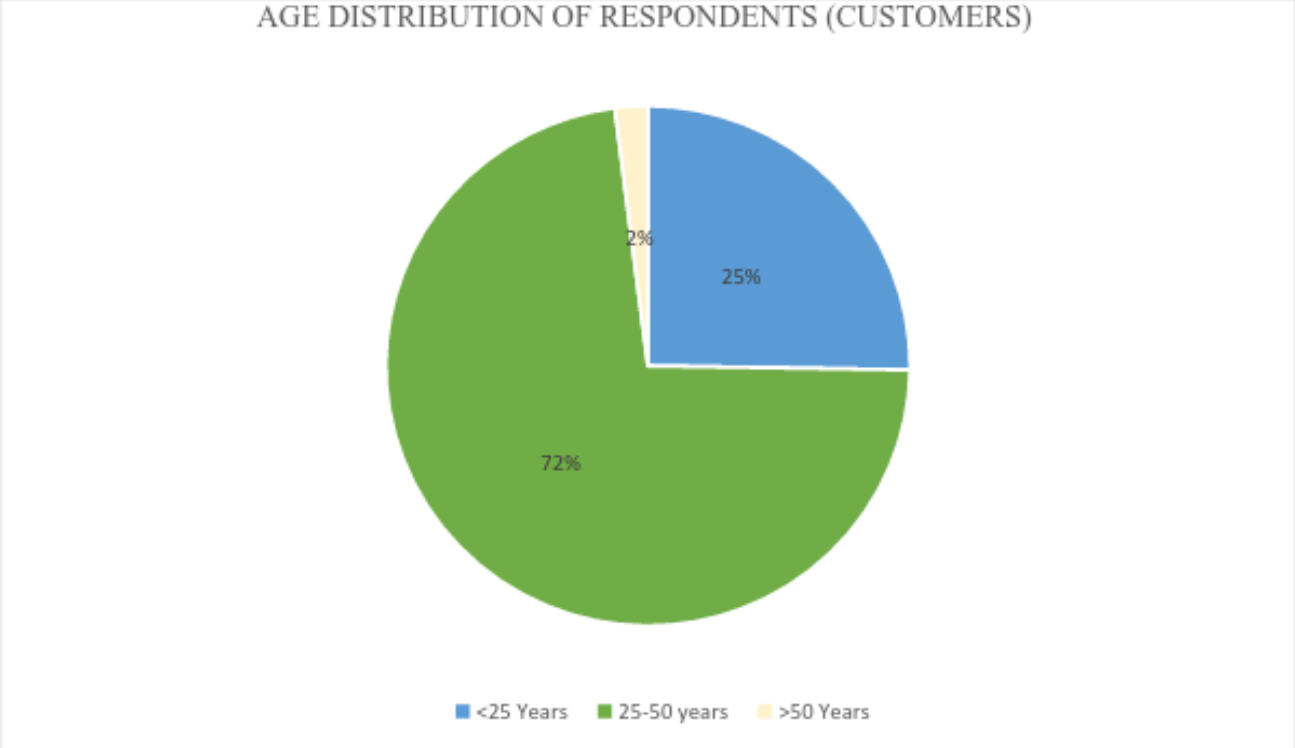
3.4 Characteristics of respondents

3.4.1 Age distribution of respondents

Customers

Figure 3.1 shows that 25% of the customers were aged less than 25 years while 72% were between 25-50 years and 2% were above 50 years.

Figure 3.1: Statistics of the customers' age

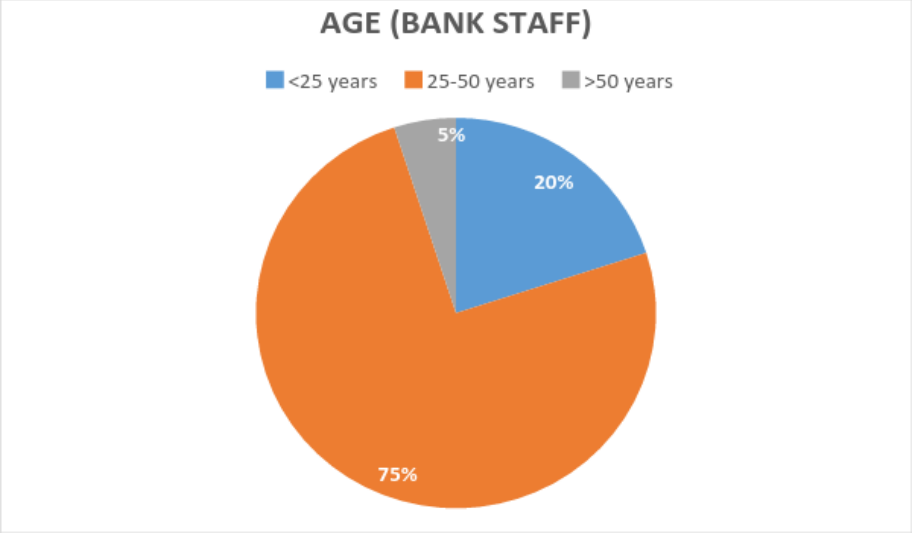


Source: compiled from this Researcher's data

Bank staff

Figure 3.2 shows the age bracket of the banking staff that were interviewed. Out of the successful interviews undertaken, 75% of the respondents (staff) were between the age of 25-50 years while 20% were below 25 years and 5% were above 50 years. The findings depict that most banking staff fall in the age range of 25-50 years.

Figure 3.2: Statistics of the banking staff age bracket

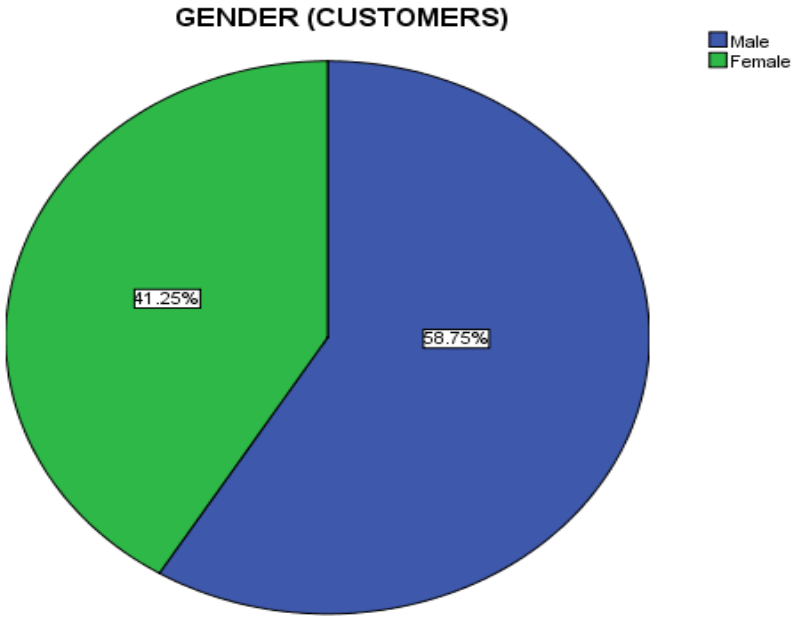


Source: compiled from this Researcher's data

3.4.2 Gender disaggregation of respondents (Customers)

Figure 3.3 shows that majority of the respondents were male, representing 58.75%, while the rest were female forming 41.25% proportion of the total respondents. This indicates a fair distribution of gender among the selected respondents.

Figure 3.3: Statistics of the customers' gender

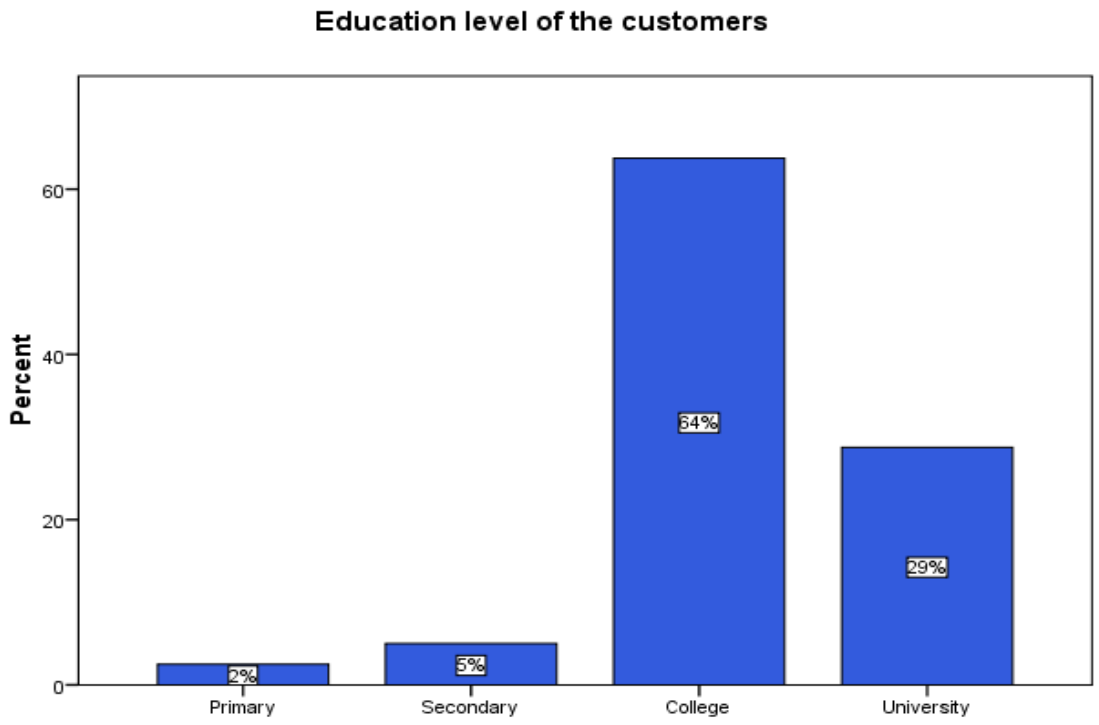


Source: compiled from this Researcher's data

3.4.3 Education level of respondents

Figure 3.4 displays the level of education of the respondents who participated in the study. From the findings, 64% of the respondents had attained a tertiary/college level qualification (Certificate, diploma and other tertiary qualifications), 29% of the respondents had attained a university level qualification (undergraduate and above), 5% had attained secondary school level qualifications (high school certificate) and 2% had attained primary school level qualification. This was substantial enough for the study.

Figure 3.4: Statistics of the customers' education level



Source: compiled from this Researcher's data

CHAPTER FOUR

GROWTH AND IMPACT OF INTERNET BANKING IN KENYA

4.0 Definition

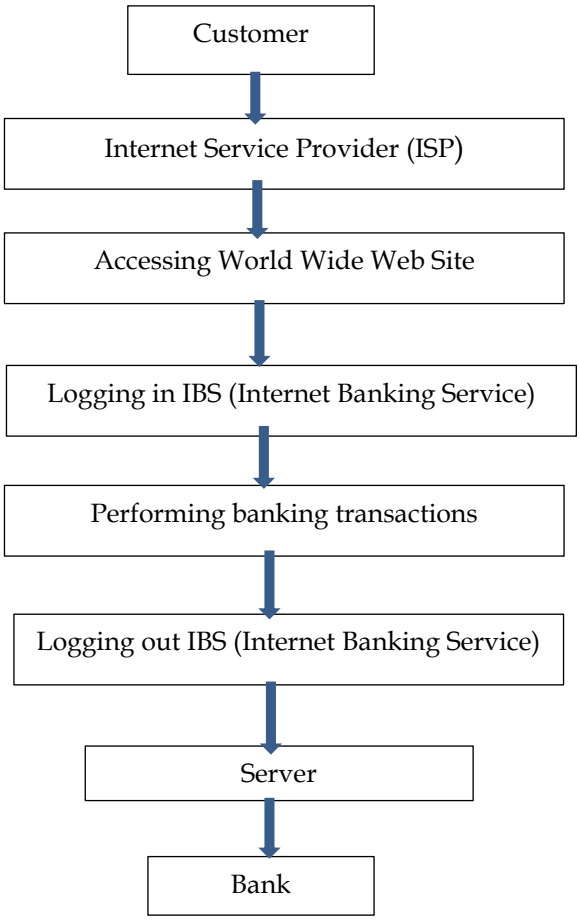
Internet banking simply refers to the deployment over the internet of retail and wholesale banking services (Chandra, 2003). It involves individual and corporate clients and also includes payments, bank transfers, settlements, card business, corporate and household lending, documentary collections and credits among others.

4.1 Internet banking adoption in Kenya banks

During the early part of the history of internet banking, the adoption rate by bank customers was slow hence failed to gain momentum until in the mid-1990s. Most customers were at first hesitant to use this banking technology and thought it was not secure and also were not sure how it worked. By year 2000, the evolution of this banking method had made a tremendous progress and started gaining popularity. Internet banking is greatly shaping the future of the banking industry with majority offering access to their products and services through the internet, one of the main distribution and communication channel. This technology enables the bank customers to log on to specific banks' website with the help of a bank issued a personal identification number (PIN).

The banks have put a lot of effort to bring banking services closer to their customers and introducing technological innovations that would add value to the sector. The information technology has played a big role in ensuring the innovations and back-office systems have been implemented in the banks. Through various initiatives and new technologies, banks have provided better customer services and customer satisfaction. Introduction of internet banking has enhanced cost reduction by shifting from manual or paper based to automated processes, control of operations, higher efficiency and led to higher productivity and profitability in Kenyan banks.

Figure 4.1: The mechanism of internet banking



Source: (Singh & Dutta, 2013)

To understand the process of innovation, it is crucial to link functional performance of technology and the amount and the structure of technology (Singh & Dutta, 2013). They further point out some three types of innovations that have been identified in the banking sector notably: Systems, material and structural innovations.

- Systems innovation is brought about by incorporation of two or more symbiotic technologies in the effort to simplify the outline of the overall structure.
- Material innovations encompass a change in the physical appearance such as the look, feel and touch. These include the touch panels in ATMs/microchips in the new electronic-payment cards, the magnetic stripes in payment cards which have continued to develop the banking sector.

- Structural innovations come about due to prices of differential growth as well as concern that nature of product and service design.

4.2 Benefits of internet banking

This research established that banks have increased security and are using encryption technology such as secure sockets layer as a security mechanism for their customers of internet banking to avoid any account hacking. The IT officers interviewed pointed out that they are keen to ensure their customers' accounts remain safe. They are providing security measures by warning their customers of ways to avoid threats, incorporated account safety features and also constant verification of internet banking account activity. Compared to traditional banking, internet banking is very cost effective service to customers and the bank.

The study also found out several benefits that come with internet banking enhance the economic growth and development. For banks, this technology brings opportunities for significant cost reduction, it has an ability to introduce new products and services faster and successfully, it allows the entity to reduce their branch networks and downsize the number of service staff owing to its cheap nature of delivering bank products, lower barriers to entry and capacity to rapidly re-engineer business process, compared to installing an ATM or opening a new branch; the capital investment to deploy internet banking is relatively low among others.

For customers, they include and are not limited to; easy access of information to customers across any location, prompt service, access of account is on 24-hour basis hence customers can choose their own convenient banking hours, ease of transferring funds between accounts and banks, ability to understand customer's needs, customers can receive security alerts to unusual activity and security breaches instantly, it has a greater reach to customers, better interest rates are offered to customers, the system is easy to use, greater customer loyalty, resources such as (loan calculators, online bill payments, investment analysis tools, budgeting tools and online tax forms) are often available without any cost implications, it saves time and minimizes cost of transaction and inconveniences too.

4.3 International trade in Kenya

4.3.1 Knowledge on international trade in Kenya

All the banking staff interviewed clearly understood what international trade entails. The common definition given was - the government or individual activities which involve the exchange of capital, goods and services between Kenya and other African countries as well as across international borders or territories.

4.3.2 Benefits of international trade in Kenya

Most of the bank staffs reported that international trade has a significant share of gross domestic product (GDP) in most countries with Kenya being a service and agricultural exporting and capital goods importing country. The banking staff argued that exports bring additional competition to the domestic markets which benefit the customers while imports help in enlarging markets for domestic production benefiting the businesses. It was also reported that international trade encourages greater efficiency; by exposing domestic firms to the best practices of foreign firms and to the demands of discerning customers as well as, gives firms access to improved capital inputs which aid in boosting productivity and providing opportunities for growth.

4.4 Internet banking usage and its effectiveness in Kenya

4.4.1 Technological innovations in the Kenyan banking sector

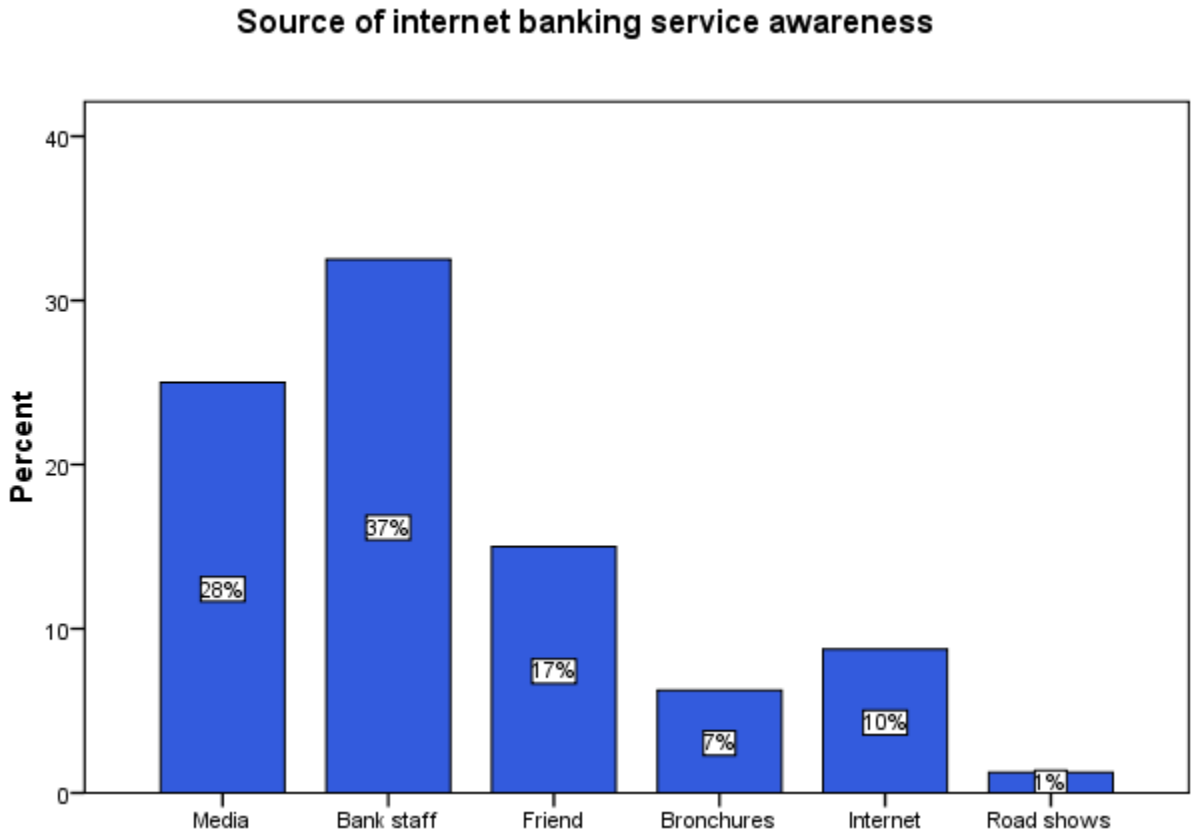
From the findings, majority of the banks have introduced internet banking, mobile banking and other e-banking facilities to enhance service delivery channels to their customers by increasing customer contact points or platforms. Electronic banking is the use of electronic means to deliver banking services while internet banking refers to systems that enable bank customers to access their accounts and general information on bank products and services through a personal computer (PC) or other intelligent device through the institutions'-websites and other internet enabled platforms. Kenya has experienced remarkable technological innovations within the banking sector in the recent past.

The research gave a better understanding of these innovations and e-banking services in relation to international trade in Kenya. The study explored the level of customers' awareness, subscriptions to e-banking platforms and services, devices customers use to access the services, frequency of use of the services, products and services available on the platform, their reasons for the usage of these services, their levels of satisfaction from the services as well as challenges experienced.

4.4.2 Internet banking awareness

The study examined the different sources of information on the internet banking platforms and services available in Kenya. From the study responses, 37% of the respondents received information on e-banking from the banks staff, 28% from media (Radio, television and newspapers), 13% from friends, 10% from the internet (social media sites and bank websites), 7% from advertisers' brochures and leaflets and 1% of the respondents received information on e-banking from road shows organized by the specific banks. The study clearly depicts the huge effort played by staff in ensuring they create awareness to their customers and use internet banking services. It is also proven by the information given by the bank staff that emphasizes on use of internet banking services being on the increase due to technological advancements and shift in consumer dynamics. Figure 4.2 depicts the strengths ascribed to the different information sources by the respondents.

Figure 4.2: Source of information on internet banking

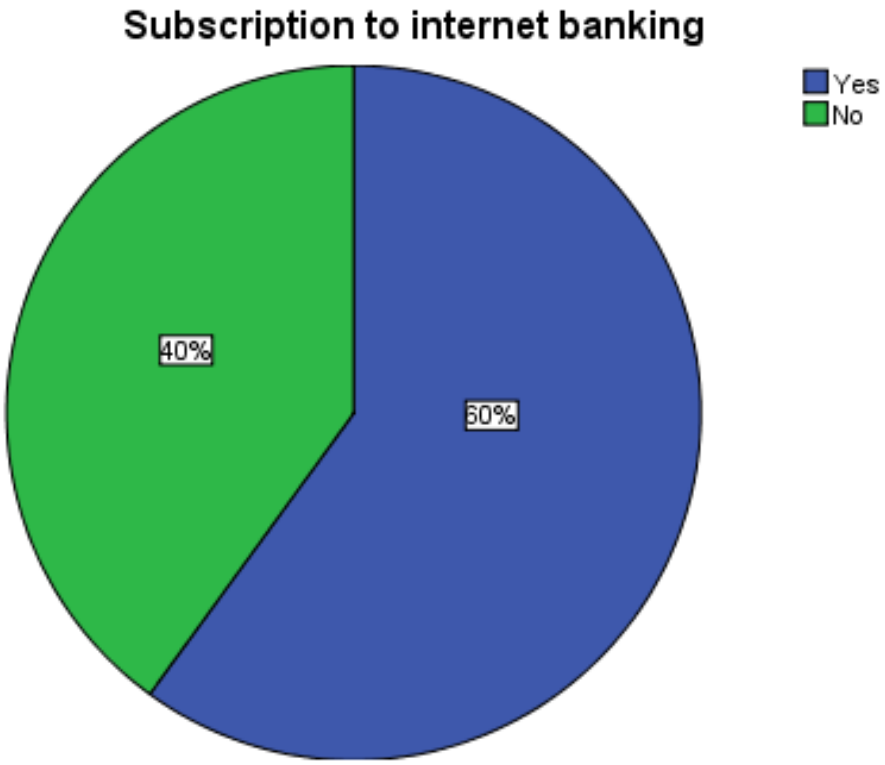


Source: compiled from this Researcher's data

4.4.3 Internet banking subscription

The study also sought to document the coverage and level of utilization of internet banking. From the study, out of the eighty (80) respondents, 60% had subscribed to internet banking while 40% had not. The high rate of subscriptions is attributable to the high levels of awareness as a result of application of multi-awareness creation platforms. Figure 4.3 depicts the proportion of respondents subscribed and not subscribed to internet banking in Kenya.

Figure 4.3: Internet banking subscription

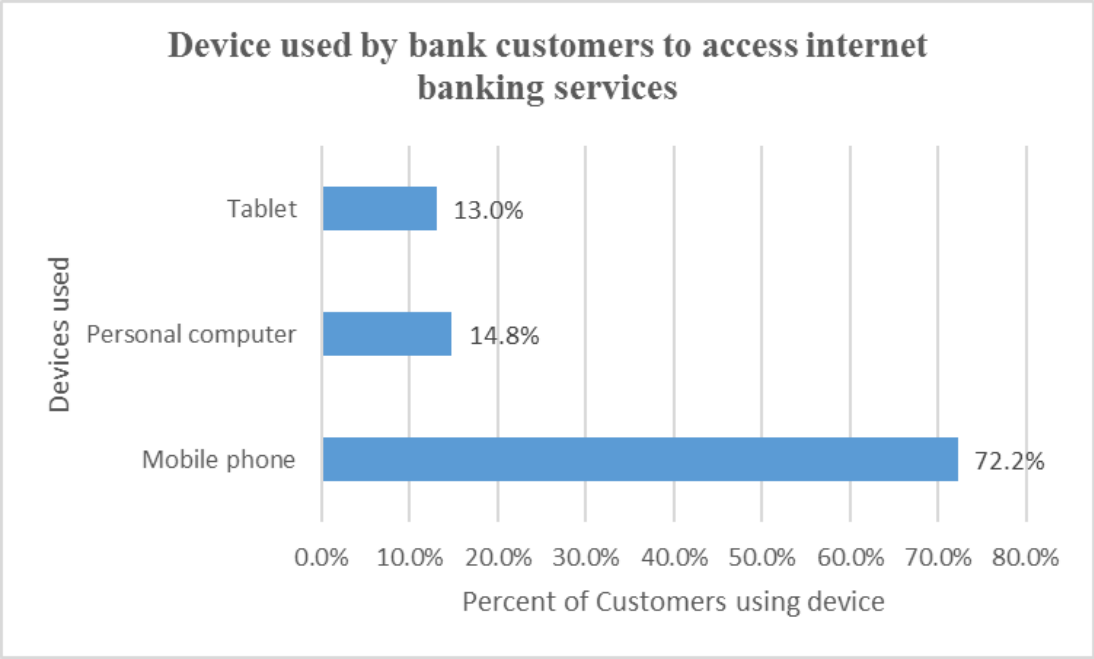


Source: compiled from this Researcher's data

4.4.4 Devices used to access internet banking services

The study sought to determine the devices that are commonly used to access internet banking services. The bank customers used mobile phones (72.2%), personal computers (14.8%) and tablet computers (13.0%) as illustrated in figure 4.4. However, customer's frequency on internet banking usage varies.

Figure 4.4: Proportion of customers using different devices to access internet banking services

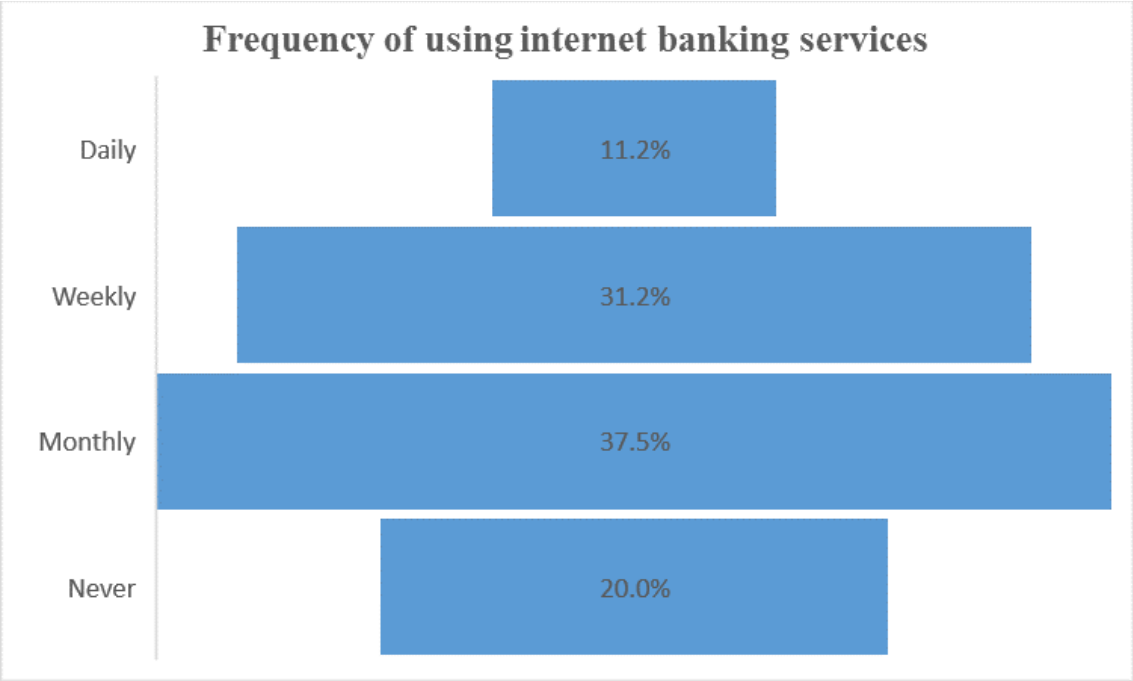


Source: compiled from this Researcher's data

4.4.5 Frequency of using internet banking services

The study also explored the frequency used by respondents on internet banking services. It was found out that, 11.2% of the respondents reported to use internet banking on a daily basis, 31.2% on a weekly basis, 37.5% once a month, while 20% of the respondents never use internet banking services despite having subscribed to the platform. A total of 80% of the respondents therefore reported to at least use internet banking services every month as depicted in figure 4.5.

Figure 4.5: Frequency of using internet banking services



Source: compiled from this Researcher's data

4.4.6 Internet banking products available in Kenya

The study investigated the various internet banking products and services that the Kenya banks offered to their customers. The banks offered a wide range of internet banking services, however, the respondents reported to use various products and services available more than others. Figure 4.4 show the kind of products offered through the internet banking platform and proportion of customers using the specific services across the different banks.

The products provided in the internet banking platform ranked with the proportion of respondents using them: They include: funds transfer (27%), withdrawals (15%), bills settlements (10%), account status updates (10%), deposits (9%), airtime top up (8%), savings and loans (7%), bank statements (6%), online purchases (5%), advertisements and checking on new products and services (3%) ranking lowest. This clearly indicates that most customers use

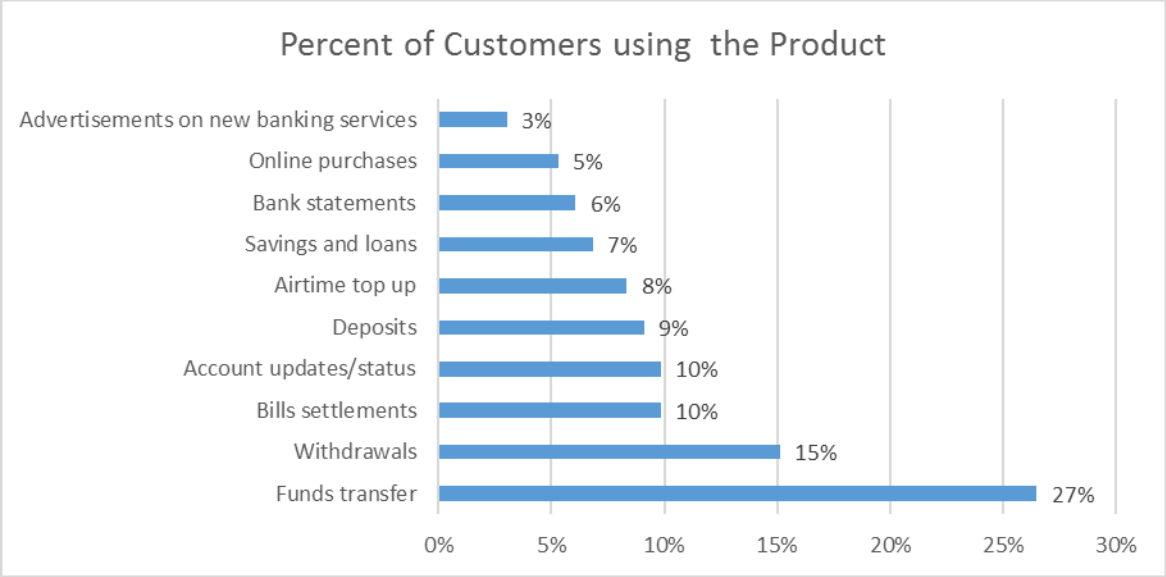
internet banking services mostly to transfer funds both locally and internationally to pay for goods to be delivered into the country as indicated on table 4.6.

Table 4.6: Internet banking products and number of respondents using them

Product	**No. of customers using the product (%)**
Funds transfer	27
Withdrawals	15
Bill settlements	10
Account updates/status	10
Deposits	9
Airtime top-up	8
Savings on loans	7
Bank statements	6
Online purchase	5
Advertisements on new banking services	3

Source: compiled from this Researcher's data

Figure 4.7: Internet banking products and proportion of respondents using them



Source: compiled from this Researcher's data

4.4.7 Reasons for using internet banking services

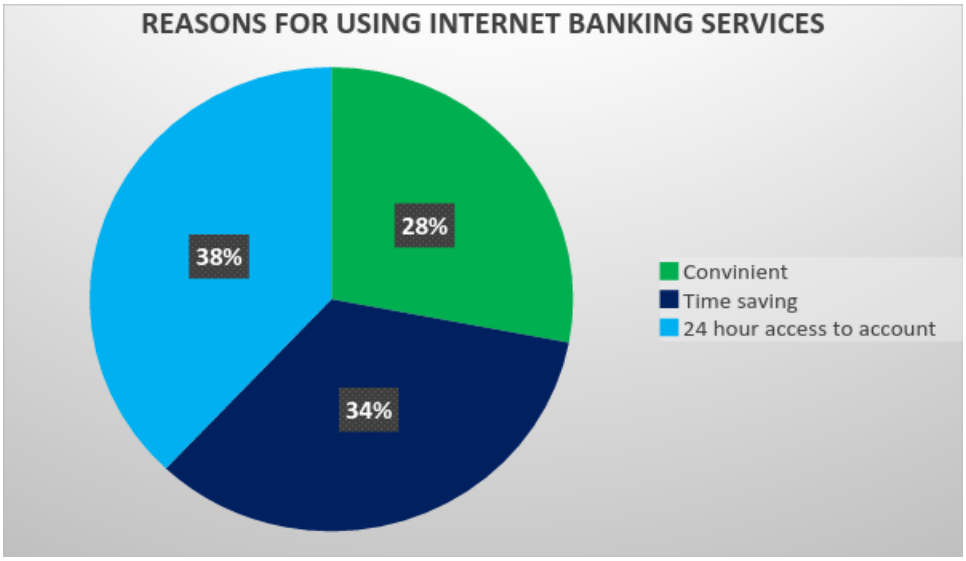
The study sought to identify and delineate reasons that the customers gave for using internet banking services. This would aid in explaining various motives as to why customers prefer to use internet banking services as opposed to other bank services that provide the same outputs. 38% of the respondents asserted that their main reason for using internet banking services was to gain a 24-hour access to the deposits and savings account, 34% of the respondents found internet banking quite fast and time saving while 28% found it convenient in terms of accessibility beyond the vicinity of the banking halls, ease of use and safety. This indicates that internet banking is mostly preferred as it aids customers in accessing their accounts anywhere and anytime without necessarily going to the banking halls as indicated in table 4.8 and figure 4.9.

Table 4.8: Reasons for using internet banking services

Reasons	Frequency	Percent age (%)
Convenient	28	28%
Time saving	34	34%
24-hour access to the bank account	38	38%

Source: compiled from this Researcher's data

Figure 4.9: Reasons for using internet banking services



Source: compiled from this Researcher's data

4.4.8 Challenges customers encounter in relation to internet banking in Kenya

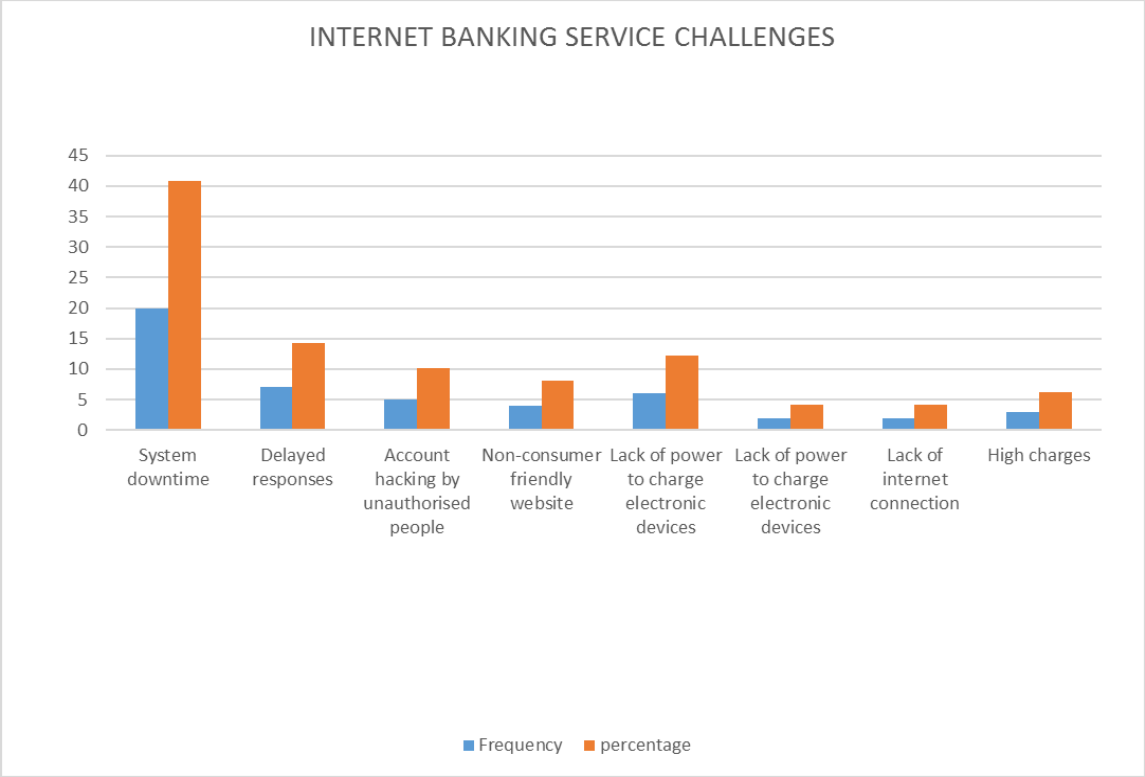
The study found out that customers face a number of challenges while using internet banking services. The study sought to clearly identify and outline the challenges in order to recommend remedial actions to the banks. From the research, 41% of the respondents reported experiencing system downtime as the major challenge, 14% experienced delayed responses, 10% of the respondents suspected or experienced accounts hacking by unauthorized persons, 8.2% of respondents experienced account accessing challenges due to non-consumer friendly websites and portals, 12% of respondents who live in places without power/electricity connection or with frequent power outages especially those living in the outskirts of Nairobi reported to lack power to charge their electronic devices, 4.1% lacked internet connection, 4.1% use devices that are not internet enabled while 6.1% complained of the high charges on internet banking services owing to continuous use of internet to access the service. Table 4.10 and figure 4.11 show major challenges given by the respondents for using internet banking services.

Table 4.10: Challenges customers face in relation to internet banking services

Challenges	**Frequency**	**Percentage (%)**
System downtime	20	41
Delayed responses/feedback	7	14
Account hacking	5	10
Non-consumer friendly website/portals	4	8.2
Lack of power to charge electronic devices	6	12
Lack of internet connection	2	4.1
Lack of internet enabled devices	2	4.1
High charges of internet services	3	6.1

Source: compiled from this Researcher's data

Figure 4.11: Challenges customers face in relation to internet banking



Source: compiled from this Researcher's data

4.4.9 Level of satisfaction

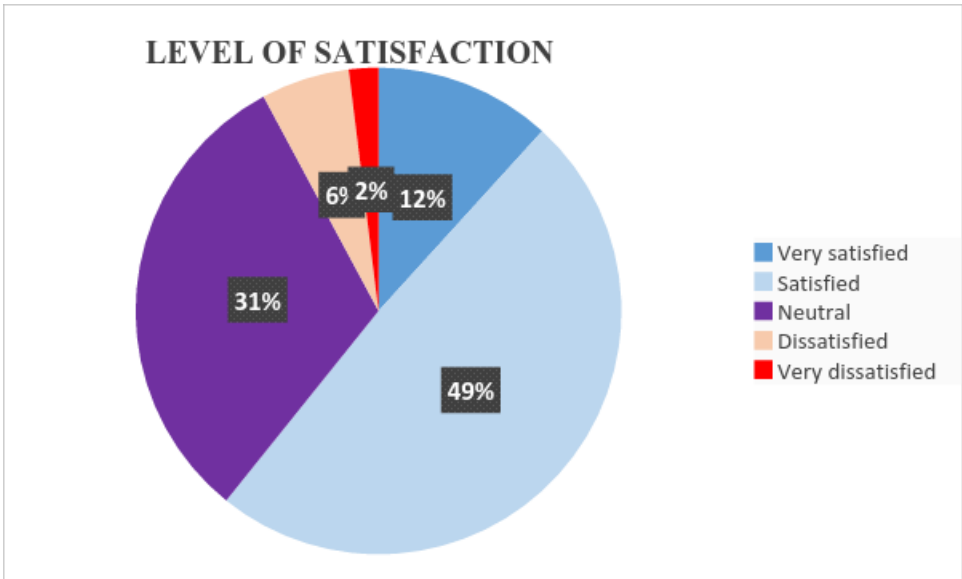
This section focuses on establishing the extent in which the banks have been able to satisfy their customers in relation to internet banking. Despite the challenges that the customers experience, all banks focus on offering quality services to their clients thus the findings on the levels of satisfaction from various customers were as follows: 12% of the respondents reported to be very satisfied, 49% of the customers said they were satisfied, 3l% of the customers reported to be neutral (neither satisfied nor dissatisfied), 6% of the customers said they were dissatisfied while 2% of the customers reported to be very dissatisfied. This shows that despite the challenges on the platform, at least 61% of respondents were satisfied with the services offered in the platform and the bank staff reported to always work on improvement based on customer feedbacks in order to improve their products and services.

Table 4.12: Customers' level of satisfaction with internet banking services

Level of satisfaction	Frequency	Percentage (%)
Very satisfied	6	12
Satisfied	25	49
Neutral (neither satisfied nor dissatisfied	16	31
Dissatisfied	3	6
Very dissatisfied	1	2

Source: compiled from this Researcher's data

Figure 4.13: Customers' level of satisfaction with internet banking services



Source: compiled from this Researcher's data

4.5 Role of internet banking in relation to international trade in Kenya

The study explored the role internet banking plays in Kenya in relation to international trade. The findings clearly depict that the level of international trade in the country is significant with reported facilitation of transactions facilitated by internet banking. Most bank staffs reported that the increase in consumption of internet banking products has increased especially among customer who engage in the export and import business. This is due to the convenience it brings in terms of making and receiving payments for goods and services traded especially across the national bounders. In relation to this, all customers reported convenience, time-saving and uninterrupted access to banking services as the key driver to the utilization of the internet products and services. Additionally, bank IT staff reported increased negotiation with major online money transfer platforms to streamline and ensure efficient and cost-effective internet banking services for customers who conduct trade especially across national and regional borders. This can be proved by the reported customer satisfaction of greater than 61% of the interviewed respondents.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presents summary of findings, conclusions drawn from the data analysis of the study, recommendations, and new insights concerning the innovations brought about by international trade in the service industry in Kenya and the impact of internet banking have well been covered in the previous chapter.

5.1 SUMMARY OF FINDINGS

5.1.1 Forms of international trade in Kenya

Kenya is an agricultural exporting and capital goods importing country. Its principle exports include coffee, tea, horticultural and petroleum products while main imports include capital goods, iron and steel. However, ICT has recently outperformed all other sectors with presence of web-based and mobile-phone start-ups contributing greatly to GDP growth.

5.1.2 Internet banking services available

According to the findings, the respondents expressed strong internet banking support for the services offered in their banks. Some of the forms of electronic banking devices and products in various banks as reported by banking staff include ATMs, SMS Banking, Self Service (PC) Banking, pas Banking (Credit and Debit cards), telephone banking, Interactive TV, Intranet, Branchless Banking and use of plastic money, mobile phone banking and electronic funds transfers. Bank customers reported to be majorly using the following internet banking services: funds transfer, withdrawals, bills settlements, account status updates, deposits, airtime top up, savings and loans, bank statements, online purchases and advertisements on new products and services. This clearly indicates that most bank customers use internet bank services mostly to transfer funds internationally to pay for goods and services exchange.

In order for the banks to remain competitive, they have been constantly adopting innovative technological changes in order to meet their consumers' requirements. According to the findings, the bank customers embraced internet banking services as they are convenient, time saving and one can access their account on 24-hour basis.

5.1.3 Technological innovations

The study established that most of the bank customers learnt about internet banking through the banking staff, which is a clear indication of the efforts put in place to encourage internet banking usage for the best interest of their customers. The study found out that the mobile phone was one device mostly used by customers to access internet banking services and other electronic banking services. This explains that mobile phone is more convenient, portable and most affordable by everyone. The study also established that most bank customers use internet banking mostly monthly. This explanation can be supported by the fact that most people are employed and usually have funds deposited in their accounts on a monthly basis. Funds transfer stands out in the study as the key product that most customers access through internet banking which go hand in hand with the 24-hour access to their bank accounts; this was the major reason as to why customers prefer to use internet banking services as opposed to others.

5.1.4 Banking sector and international trade

Considering all the components of international trade that affect the Kenyan economy, for example, inflation rate, tariff and non-tariff barriers, exchange rates and government expenditure, the respondents strongly agreed that international trade has greatly and positively contributed to Kenyan economic growth. International trade has made a substantial contribution to the economic growth in Kenya – both financial and capital. The study recognized that the banking sector helps in facilitating international trade which greatly aids in ensuring an overall growth of the Kenyan economy.

5.2 CONCLUSION

The proponents of modernization viewed trade between the principal producing countries of developed industrial nations, Asia, Africa and Latin America as equally and mutually valuable to all the players. In developing countries, international trade led to the growth of economic activity thus facilitated exertion of productive resources that were inactive. Through trade, these countries had a surplus for their produces and sales which boosted their economic development. It was argued that trade brought about innovations and augmented productivity, expanded the extent of the market as well as increased savings and accumulation of capital. The developed countries instilled the wants and tastes as well as transferred to the developing countries western skills, entrepreneurship and technology.

All these benefits of international trade were thought to be gained as far as the comparative advantage law operated freely which in return would determine the trade pattern. This would have been evident if specialization in production of commodities was done by countries that had technological skills and biodegradable endowment advantage. International trade had been seen to provide huge benefits especially to the principal producing countries. However, according to historical reality both in colonial and post-colonial periods, it has been noted that the trade of comparative advantage has extremely benefitted the Western or developed countries owing to their domination of international economy to the impairment of- under developed countries.

It is argued that the gap between the developed and developing countries has widened leaving the latter poorer and the former has increasingly grown richer during their trading exchange. Trade was an important element especially in amalgamation of African economies into the system of the world capitalist. This is because it produced new industrial perspectives, stirred the money market growth and financial institutions of the capitalists.

Therefore, the study found that most of the customers have strongly subscribed to internet banking services. Some of the products they enjoy include airtime top up, funds transfer, funds deposit, withdrawals, loans, bills settlement, account updates, among others. Some of the reasons that stood out from the study on internet banking usage include time saving aspect, convenience and 24-hour access to bank account as the major reason.

The researcher found out that in Kenya's banking sector, there are various benefits that have been brought about by these technological transfers and innovations, majority resulting from international trade such as; global compliance, wider networking (regional and global links), fraud reduction and improved risk management, convenience, cost and time effectiveness, swift processing and transmission of information among others.

5.3 RECOMMENDATIONS

Due to consistent experience of internet banking challenges by banks, the researcher recommends that the banks should set up strategic measures in order to minimize the banks' influence in the delivery of services and to enhance internet banking.

In order for the banks to improve in their service delivery in relation to internet banking, the researcher recommends highly qualified personnel with ICT skills to be employed in order to deal comprehensively with some of the technical hitches experienced by internet banking customers e.g. system downtime which happens to be a major challenge.

The study found that more research is required to create a user friendly customer website and ensure that bank customers get timely responses to their queries.

It was also revealed that the banks should provide simplified systems and constantly update their websites with current information. Generally, the study found that the ostensible challenges associated with internet banking should be determined and necessary measures taken to encourage subscription and usage of the service by bank customers.

REFERENCES

(n.d.). Retrieved from https://en.oxforddictionaries.com: https://en.oxforddictionaries.com

http://news.xinhuanet.com/english/2015-07/21/c_134433380.htm. (2016). Retrieved 9 4, 2016, from news.xinhuanet.com: http://www.news.xinhuanet.com

https://www.wto.org/english/tratop_e/tpr_e/tp124_e.htm. (2016). Retrieved 8 21, 2016, from World Trade Organization: https://www.wto.org

Adem, S. (Ed.). (2016). *China's Diplomacy in Eastern and Southern Africa.* New York, USA: Routledge.

Baker, R. H. (Ed.). (1999). *Technology and Banking: Congressional Hearing.* Washington D.C: DIANE Publishing.

Berger, A., & Wilson, P. M. (Eds.). (2010). *The Oxford Handbook of Banking.* New York, United States: Oxford University Press Incl.

Brownbridge, M., & Harvey, C. (1998). *Banking in Africa: The impact of Financial Sector Reform since Independence.* Oxford: Africa World Press, Inc.

Chandra, R. (Ed.). (2003). *Information Technology: A Revolutionary Change* (Vol. 3). New Delhi, India: Kalpaz Publications.

Economy Watch. (n.d.). Retrieved August 14, 2016, from www.economywatch.com: http://www.economywatch.com

Grath, A. (2005, 2008). *The Handbook of International Trade and Finance: The Complete Guide to Risk Management, International Payments and Currency Management, Bonds and Guarantees, Credit Insurance and Trade Finance.* London and Philadelphia: Kogan Page Limited.

Hansen, E. R. (Ed.). (2011). *Multinational Corporations and Local Firms in Emerging Economies.* Amsterdam: Amsterdam University Press.

Howse, M. J. (1995 and 1999). *The Regulation of International Trade (Second Edition).* London, Great Britain: Routledge.

http://www.businessdailyafrica.com/What-Kenya-stands-to-gain-from-UNCTAD-Nairobi-meeting/539546-3295254-item-1-u7mso/index.html. (n.d.). Retrieved 9 4, 2016, from www.businessdailyafrica.com: http://www.businessdailyafrica.com

https://ustr.gov/countries-regions/africa/east-africa/kenya. (n.d.). Retrieved 9 4, 2016, from https://ustr.gov: http://www.ustr.gov

Inama, S. (2009). *Rules of Origin in International Trade.* New York, USA: Cambridge University Press.

Jonathan Reuvid, J. S. (2011). *International Trade: An Essential Guide to the Principles and Practice of Export.* London: Kogan Page Limited.

Liu, S., Fang, Z., Shi, H., & Guo, B. (2009). *Theory of Science and Technology Transfer and Applications.* CRS Press.

Massimiliano Cali, K. E. (2008). *The contribution of services to development and the role of trade liberalisation and regulation.* London: Overseas Development Institute.

Maxon, W. R. (Ed.). (n.d.). *An Economic History of Kenya.* Nairobi, Kenya: East African Educational Publishers Ltd.

Möckel, C. (2010). *European B2C E-Commerce in the Banking Sector.* Hamburg, London: London South Bank University.

OECD. (2012). *Policy Priorities for International Trade and Jobs.* (D. Lippoldt, Ed.) France: OECD Publishing.

Ravi, V. (Ed.). (2007). *Advances in Banking Technology and Management: Impacts of ICT and CRM.* Hershey, New York: IGI Global.

Richard, L., & Chrystal, A. (2011). *Economics* (12th ed.). New York: Oxford University Press Inc.

Ronald A. Cass, J. H. (1998). *International Trade in Telecommunications.* Washington, D.C. and London: The AEI Press and The MIT Press.

Singh, K., & Dutta, V. (2013). *Commercial Bank Management.* New Delhi, India: McGraw Hill Education (India) Private Limited.

Tang, Y. S. (2009). *The International Trade Policy for Technology Transfers: Legal and Economic Multillateralism versus Bilateralism.* The Netherlands: Kluwer Law International.

Targowski, A. S. (1996). *Global Information Infrastructure: The Birth, Vision, and Architecture.* Hershey & London, USA & UK: Idea Group Publishing.

UNCTAD. (2012). *http://unctad.org/en/PublicationsLibrary/diaepcb2012d2_en.pdf.* Retrieved 8 26, 2016, from unctad.org: http://www.unctad.org

Vaidya, A. K. (Ed.). (2006). *Globalization: Encyclopedia of Trade, Labor and Politics* (Vol. 1). Santa Barbara, California: ABC-CLIO.

Vasudeva, P. K. (2011). *International Trade* (First ed.). New Delhi: Anurag Jain, Excel Books.

APPENDIX 1

QUESTIONNAIRE

Questionnaire for Customers

The researcher's name is Ann Njagi, a student at the Institute of Diplomacy and International Studies at the University of Nairobi pursuing Masters Degree program in International Studies, carrying out a study on innovations brought about by international trade in the service industry in Kenya with a focus in the banking sector.

I humbly request you to fill in this questionnaire, which is part of my study. This information is purely for academic purposes and shall be treated with maximum confidentiality and used for the purpose of this study.

Your co-operation will be highly appreciated. Thank you.

Personal Information

i) Name of the respondent: ……....

ii) Age: Below 25yrs ☐ 25 to 50 yrs ☐ Above 50 yrs ☐

iii) Sex: Male ☐ Female ☐

iv) Education Level: (*please tick one*) Primary ☐ Secondary ☐
College ☐ Other ☐

If other, please specify: …….....

v) BankName:

…….

vi) Account Type: …… Current ☐

Savings ☐

Fixed ☐

If other, please specify: …….....

1. Internet Banking

(a) Have you ever heard of internet banking service? (*tick one*) Yes ☐ No ☐

If yes, how did you learn of it? ……

……

…

(b) Have you subscribed to internet banking? (*tick one*) Yes ☐ No ☐

(c) What device (e.g.Personal computer, Mobile phone, Tablet, IPad etc) do you frequently use to access internet banking?

……...

.....

(d) How often do you use e-banking? Daily ☐ Weekly ☐

Monthly ☐ Never ☐

(e) What particular products or services can you access from your bank through internet banking service? (List them all)

……

……

…....

……

……

……

……

(f) What are your reasons for choosing internet banking service? (select all that apply)

Time saving ☐

Convenience ☐

24 hour access to account. ☐

Other ☐

(g) From your past experience on using internet banking, how do online products and services differ from traditional banking products/services?

……

……

…...

……

…….

……

……

(h) As a customer, what benefits do you get from internet banking services and other electronic banking services offered by your bank?

……

……

……

……

……

…

(i) Do you have any challenges with the banking website/portal?

……
……
……
……
……
…

(j) Do you experience any other challenges related to internet banking except the ones mentioned above? (Please list them all)

……
……
……
……
……
….

(k) What other electronic banking products and services would you wish your bank to provide for its customers?

……
……
……
……
……

(l) What would you recommend your bank to improve on in relation to electronic banking services?

……
……
……

……

…….....

……

…..

m) What level of satisfaction have your expectations and requirements been met by your current bank in relation to internet banking?

Very Satisfied	☐	Satisfied	☐
Neutral	☐	Dissatisfied	☐
Very dissatisfied	☐		

THANKYOU

APPENDIX 2

INTERVIEW GUIDE

Interview questions for banking staff

The researcher's name is Ann Njagi, a student at the Institute of Diplomacy and International Studies at the University of Nairobi pursuing Masters Degree program in International Studies, carrying out a study on innovations brought about by international trade in the service industry in Kenya with a focus in the banking sector.

I humbly request you to fill in this form, which is part of my study. This information is purely for academic purposes and shall be treated with maximum confidentiality and used for the purpose of this study.

Your co-operation will be highly appreciated. Thank you.

Personal Information

1. Name of the respondent: ……

Age: …….....

Sex: ……...

Marital Status: ……..

2. What is your designation / Job title? …….

3. What are your key responsibilities in your role?

……..…….……

……

……

……

……..……

……..

4. International Trade

(a) What is your understanding on international trade?

……

..……

…..……

…….

……

..

(b) What types of international trade is Kenya engaged in?

……

……

……

……

.

(c) How does international trade affect the Kenyan economy?

……

…….

……

..……

….

……

.

(d) How does international trade affect the Kenyan banking industry?

……

…….

……

……..

……

……..

……

……..

5. **Internet banking services**

(a) What forms of internet banking do you know?

……

…

……

..

……

..

(b) Which internet banking services does your bank offer?

……

……..

……

.....

……

……

……

……

(c) Briefly explain when and how internet banking service was introduced in your bank?

……
……

……
……

……
……...

……
……

……
……

(d) How do you inform or train your customers on the usage of internet banking and other electronic banking product and services?

……
……..

……
……..

……
……..

……
……..

(e) What is the percentage of your customers who use internet banking options?

……
……..

……
……..

……
……..

……
……..

(f) What are your customers' feedbacks on their past experiences on use of internet banking services?

……
……..

……
……..

……
……..

……
……..

……
……..

(g) How has internet banking improved your bank's productivity?

……
..……
…..
……
..

……
..

(h) What do you think your customers value in relation to internet banking services?

……
……
…..
……
..
……
..

(i) What other major products and services does your bank provide to its customers related to electronic banking?

……
..
……
..
……
..
……
..

(j) What is your general feeling about internet banking?

……
……
….

……
..

……
..

(k) What other products and services does your bank plan to introduce related to e-banking in future?

……
……
……

……
.

(l) What challenges is your bank facing in providing internet banking services?

……
……
……
……

(m) What measures has your bank taken in relation to the challenges experienced in providing e-banking services?

……
.....
....

……
..

.....
.....
....

(n) What technological innovations has your bank adopted in relation to international technological transfer?

……

..……

…..……

……..

……

..

……

..

5. Effects of technological advancement on trade

(a) How have technological innovations affected trade in Kenya?

……

……

……

……

(b) In your opinion, how best do you think Kenya can leverage on technology to improve trade?

.....

……

……

……

……

6. International trade and technology transfer

(a) How has the Kenyan banking sector benefitted from technological innovations?

……

……

……

……

……

(b) In your opinion, how best do you think Kenyan banking sector can leverage on technology to improve financial service delivery and trade?

……..
……..
……..
……..
……...

(c) Are there any technological transfers that Kenya banking sector has benefitted in? If so, how?

.....
.....
.....
.....
.....

THANK YOU