

**DIGITAL TECHNOLOGY AND COMPETITIVE ADVANTAGE OF
COMMERCIAL BANKS IN KENYA**

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REQUIREMENT FOR THE AWARD OF THE DEGREE OF MASTER OF
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DECLARATION

This research project is my original work and has not been presented to any other university or institution of higher learning for the award of degree or diploma or certificate.

Signature.....Date.....

PHELLISTERS KERUBO OMARI

D61/64189/2013

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

Signature.....Date.....

PROFESSOR. EVANS AOSA

DEDICATION

I dedicate this project to my loving child for always being with me throughout my academic journey. I also dedicate to my family for their constant encouragement and for being patient enough to see me go through my academic struggle in an effort to realize my long cherished academic dream.

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ABSTRACT

Digital Technology has been considered as the defining factor in modern banking. It has enabled banks to provide quality services and products to the consumer eventually improving competitiveness. Technology is a form of change that is geared to allow the institutions to adapt to changes. Therefore, the role of digital technology is essential in the distribution channels and competitiveness of commercial banks. The objective of the study intended to determine the effect of digital technology on the competitive advantage of Kenyan banks. The study used a descriptive cross-sectional survey. The population of study was all the registered 43 commercial Banks in Kenya. Open ended questionnaire was used to gather the primary data from commercial banks. Collected questionnaires were edited and cleaned for completeness in preparation for coding. They were coded and keyed into the SPSS version 22, for analysis. Descriptive statistics such as means, standard deviation and frequency distribution were used to analyze the data while percentages and frequency tables were used for data presentation. The study found that the use of ATMs in service delivery influences the competitive advantage of the bank. The use of ATM has helped the bank in simplifying customer banking experience and lowering the costs of transactions for example the electronic withdrawal of cash across the ATM has resulted into reduction of costs. The study found that that the use of mobile banking in service delivery influences the competitive advantage of the bank. The study also found that the use of mobile banking has managed to enhance convenience and flexibility in offering financial services to its customers. The study found that the use of internet banking in service delivery influences the competitive advantage of the bank. The study concluded mobile banking provides increase convenience, expand access and significantly save time for the customers. The main limitation of the study was in the inability to include other financial institutions as the case study focused on Kenya commercial banks only. The study would have covered more institutions across all sectors so as to provide a broader based analysis. The study recommends that a further study should also be carried out to determine the influence of ICT in achieving competitive advantage at other sectors such as manufacturing companies. A further study should also be carried out to determine the relationship between information technology strategies and competitiveness in banking sector.

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

In the contemporary business settings, the concept of competitive advantage has emanated as a differentiating factor between success and less performing organization. In particular, a large portion of organizations has used the idea to improve profitability of the firms, improve competitiveness, and more importantly beat competition (Bhat & Darzi, 2018). According to Weil (1985) the Competitive advantage exists when a firm stands out delivering same benefits as those of competitors at a lower cost. This entails the development of attributes that enable a firm to outshine its rivals, primarily by delivering better value, which leads to satisfied consumers. Hoffman, Hoelscher, and Sorenson (2006) argued that these attributes include access to cheaper raw material, inexpensive power, and highly trained personnel. Competitive advantage is important in Commercial Banks in Kenya because it enables the banks to offer high quality of products and services at low cost.

The study will be anchored on theories of management, which emphasizes on the essence of competitive advantage in organizations. The innovation diffusion theory seeks to expound on the manner, why, and what rate new idea and technical innovations spread. Therefore, the approach will shed light on the key components like innovation itself, the communication channel, and the social system (Jamshidi & Hussein, 2016). On the other hand, the theory of financial intermediation focuses on the need for financial institutions such as banks to create goods and services, which have a well-designed intermediary system. The approach allows the setting of prices that has factored in all the direct and

indirect costs associated with a particular product. Finally, the theory of competitive advantage is anchored on the need to have the upper hand against the competition. The approach, which was advanced by Michael, focuses on the aspect that allows an organization to have a sustainable competitive edge (Peranginangin, 2015).

In other words, the theory highlights the key areas that an organization must focus on to gain a competitive advantage. Therefore, the research seeks to determine the effect of digital technology on the competitive advantage of Kenyan banks. This study was carried out in the Forty-Three Commercial Banks in Kenya licensed by Central Bank of Kenya which are facing rivalry due to high competition in the market. The Management of these Banks must adopt ways of staying Competitive in the banking industry by using various methods of Digital Technology.

1.1.1 The Concept of Digital Technology

Digital Technology has been considered as the defining factor in modern banking. It has enabled banks to provide quality services and products to the consumer eventually improving competitiveness. Molla (2006) argued that technology is a form of change that is geared to allow the institutions to adapt to changes. Other studies have noted it as the process of developing new ideas and concepts that improve business operations. Therefore, the role of digital technology is essential in the distribution channels and competitiveness of commercial banks. According to Ravi (2008), a large portion of the banks is using advanced computer algorithms to solve challenges, such as market segmentation, target marketing, among others.

Busch (2008), has outlined that most banks are using the internet to provide service to customers across different geographical locations. For example, Wide Area Network (WAN) and other forms of the network have been used to share information on consumers, thereby improving the provision of service in the long run. In addition to this, other online services, such as E-commerce, have allowed banks to provide different services and product to consumers. Hence banks have leveraged on technology to improve service delivery and competitive advantage.

1.1.2 The Concept of Competitive Advantage

Mishra (2017) highlighted that competitive advantage exists, whereby a firm can offer consumers with a higher value, either by reducing the price or offering better services that justify a higher price. Therefore, Porter (1985) defines the concept along three dimensions of cost, differentiation, and focus on why the rivals endeavor to set them apart, According to David (2011), a firm attains competitive advantage when it obtains aspects that enable it to outshine its competitors because of efficiency. Several studies have indicated that competitive advantage has become a key factor that determines the overall performance of various organizations by offering higher values to their consumers of low prices. An organization that attains competitive advantage has improved profitability by delivering efficiency and increasing the quality of its products and services.

1.1.3 Commercial Banks in Kenya

The Banks in Kenya represent an important role of the nation's economy by facilitating the flow of cash from the depositors and borrowers ensuring that businesses have access to credit. The Central Bank of Kenya (CBK) has been mandated to regulate the affairs of the banks by the Kenyan Government in conjunction with other institutions.

There are forty-three banks in Kenya, which have been incorporated under the company law and the Banking Act. The high rate of growth in the Small and medium enterprise has tremendously contributed to unanticipated growth. However, the global recession, coupled with the capping of interest, has lowered the profitability and growth of the financial sector.

A report prepared recently by the CBK highlighted that the smaller banks experienced a decline in the capital due to the capping. Additionally, the profitability of the banks plummeted with the return of equity hitting the lowest rate of 19.8% in February of 2017 (Central Bank of Kenya, 2018). The CBK further noted that the overall structure of deposit shifted in favor of demand deposits, which has ramifications in the long run. This also undermined the conduct of monetary policy, which is crucial in stimulating the economy and containing inflation. The banking sector has benefited from technology, which has improved service delivery and effectiveness to customers.

1.2 Research Problem

Competitive advantage has emerged as one of the concepts that have been used by different organizations to improve performance. Mishra (2017) indicated that competitive advantage occurs when a firm can provide better value to consumers, either by lowering the price or offering better products and service that justify the price. The concept was conceptualized by Porter in 1985 using three approaches; cost leadership, focus, and differentiation. The element of cost leadership means that organizations can offer reasonable value at lower prices. The second element emphasis on differentiation, which allows companies to deliver better value than any other player in the market. Lastly, the concept of focus enables the company to understand their target market so that they can deliver good quality of its products. Therefore, organization leverage of the three elements

to develop a competitive advantage, which has improved the overall performance and beat their rivalries.

The banking sector has focused on digital technologies to attain competitive advantage. According to Oredo, Njihia, and Iraki (2017), most Kenyan bank do leverage on technologies such as mobile banking, e-wallet, and agencies banking to provide better service to consumers. Digital technologies have improved the quality of service delivered by banks and competitiveness in the banking sector. There are a number of studies that have focused on the banking sector and precisely on a competitive advantage. Gatiiria Gitonga (2016), study focused on how banks can use generation Y talents to build a competitive advantage. The research was based on the notion that Kenyan bank can develop competitiveness by harness the talent and skills of the generation Y.

Kasasbeh, Harada, and Noor (2017), research focused on the factors that influenced the competitiveness of the Kenyan banks. The finding of study outlined that factors of competitive advantage include market differentiation, quality of service, strategy formulation, creativity of human personnel, market innovation and customer orientation. This research sheds light on parameters banks can use to develop competitive advantage such as use of mobile banking or online banking to transact saving time instead of going to the Branch to be served. Therefore, the study seeks to focus on how digital technologies can improve the overall performance of the banks. According to Aludo (2017), digital changes are the driving factor that has allowed banks to overcome competition. Hence the research question is: What is the influence of Digital Technology on the competitive advantage of Kenyan Banks?

1.3 Research Objectives

The objective of the study intended to determine the effect of digital technology on the competitive advantage of Kenyan banks.

1.4 Value of the Research

The finding of this study may be imperative for policymakers who seek to determine the ramifications of technological Technology of the overall contribution of an institution. In particular, this study will offer insights to the regulators in the banking sector, especially on how they can create regulations that are technically oriented to improve service delivery. Besides, the findings of the research may allow banks to adopt better methods of incorporating Technology to benefit fully from such advancements.

On the other hand, the study may be essential to scholars, especially those who are concerned with improving the performances of different business. Technology is one of the domains that have been used to improve efficiency and the provision of various services in the financial sector. For instance, the mobile banking has revolutionized the banking sector by offering better services to the consumers. Lastly, the findings may be precisely shed light on further future research, which will be conducted by interested scholars in the future.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section shed light on the theoretical foundation of the research to locate the literature that supports the current topic. The researcher discussed theories that relate to the subject of study, either by challenging them or collaborate them with the current study. Additionally, the section discussed the empirical knowledge and study gaps thereof.

2.2 Theoretical Foundations of the Study

The study is anchored on multiple theoretical foundations. The theories, which are vital and relevant to the study, are discussed in this section. The discussed theories are Technology diffusion theory, competitive advantage theory and financial intermediation theory.

2.2.1 Technology Diffusion Theory

The introduction of something new in the market is met with resistance. The spread of technology goes through a life cycle with some people taking very long to accept it. Wani & Ali (2015) noted that the lifecycle of technology acceptance includes, innovators early adopters, early majority, late majority, and those in resistance to accelerate the rate at which technology is adopted, there has to better communication.

In 1962, Rogers developed the theory of Technology diffusion to aid in explaining how an idea is disseminated and how it spreads in the society. Mahajan (2010) terms diffusion theory's primary focus to be “on communication channels, which are the means by which

information regarding the Technology is transmitted to or within the social system. With better communication, Rogers notes that an idea of such technology is adopted faster.

To adapt to a given technology, a person goes through another lifecycle. First, an individual must be aware of the need for technology. Next, the individual must decide on adopting or rejecting the technology idea given to them. If they accept, they go ahead and use it for the first time as a way to test it. Once they find it useful, they make the decision to continue using the technology.

Hall & Khan (2003), give five factors that determine the speed of acceptance of new technology. An organization will first consider the comparative benefit of accepting the technology. If the technology is better than what they have, it becomes more likely that it might be approved. Next is the compatibility of the technology with the values, experiences, and requirement of the organization. The third factor of consideration is the technology's complexity. If it is too complicated, the adopter may choose not to accept it. Trialability of technology also determines if the technology is adopted or not. The easier it is to test technology, the more likely the technology will be adopted. Finally, the technology must bring results. If the effects are not observable, it becomes less likely that an individual or an individual would utilize the technology.

2.2.2. Financial Intermediation Theory

When buying goods and services, there are transactional costs that are incurred. These costs can have a considerable impact on an organization's operations. Different measures have been taken to aid in the reduction of transactional costs. One of the main ways is the use of financial intermediation. Banks and other financial institutions have played a crucial role

in reducing transactional costs. Financial institutions also help in reducing informational asymmetries (Greenbaum, Thakor & Boot, 2019). When an organization makes poor decisions, it is more likely to increase transactional costs and possibly record losses. Financial intermediation through institutions such as banks offers advice to individuals and organizations helping them make better decisions. Information can also create competitive advantage for an organization as it helps them make correct decisions faster ahead of their competitors.

2.2.3 Competitive Advantage Theory

Competition plays a critical role in the market today. Due to competition, every firm seeks to have something that differentiates it from the rest. According to Noe, Hollenbeck, Gerhart & Wright, (2017), firms will maximize the little advantage they have in order to access more market, which is termed as a competitive advantage. With the advancement of technology, organizations that are quick to adapt to a technology gain a competitive advantage over others.

In order to beat the competition in the market, there are four strategies that companies can use. These include ‘cost leadership, differentiation, cost focus, and differentiation focus’. In these four strategies, technology has a critical role to play. Cost leadership has organizations offering the lowest possible prices and this helps it to gain more customers even though the profit per sale is low. Banks aim to attract a larger pool of clients if they offer their loans at the lowest possible interest rate (Riasi, 2015). This enables the bank to have a broad market. With a broad market, an organization can effectively compete with its competitors. In differentiation, organizations aim at making their product unique as a strategy of attracting customers.

Many organizations have used technology as a way to improve their product and make it unique. In cost focus, organizational targets a specific niche and offer its products or services at the lowest possible prices. Differentiation focus focuses on building brand loyalty making a product unique. Competitive advantage can be influenced by internal force such as corporate identity and core competencies. These two factors determine the positioning of an organization making it stand out in the market and increasing customer base. When the people have a positive perception regarding a product or an organization, this creates a competitive advantage for the organization or product. As a result, organizations including financial institutions such as banks have to give priority to corporate identity and core competencies.

2.3 Digital Technology in Organizational Management

Digital Technology has been used by banks to improve their products and service delivery. According to Arrawati et al. (2015) the competition of banks was based on efficiency and the trend was based on two-decade research. Other studies have shown that the Porter competitive forces have formed the decision made by Kenya banks as well those made in public universities (Chepeta & Muthinja, 2018). The organizations can leverage technology to develop a competitive advantage. In Kenya, commercial banks can use information technology as a method of creating competitiveness through cost leadership and differentiation.

Technology has allowed banks to streamline their essential operation by improving efficiency and reducing the cost. According to Ravi (2008), the use of computer networks, security algorithms, internet banking, ATMs, and mobile banking are an example of Technology, which has changed how banks operate in Kenya.

Technology has allowed banks to lower risk associated with the provision of banking services because customers can do transactions on their own through the online banking accurately. Aludo (2017) indicated that banks must embrace digital changes to remain competitive and more importantly generate revenues. In response to this, a large portion of the banks have adopted the use of mobile banking to offer services such as account balance, bill payment alerts, account statement inquiries, receipts transactions, and other services. Hence this has been of convenience to the customers who do not need to visit the Banking hall because they are able to perform transactions and raise service requests at their comfort.

The banking sector has witnessed several changes, which has forced them to focus on digital technology as a way of improving competitiveness. To begin with, the mobile banking applications have allowed banks to improve service delivery to its consumers. In particular, they have created convenience to consumers in the dissemination of services, such as withdrawal of funds, bill payments, local and international funds transfers, deposits and credit services. The commercial banks that were first to implement this technology were able to overcome competition and more importantly improve profitability. Therefore mobile banking and internet banking are among the technology that have remarkably changed the banking sector.

2.4 The Concept of Competitive Advantage in Organizational Management

Over the years, companies have developed business approaches that allow them to create a competitive advantage. According to Porter (1985) he highlighted that competitive advantage occurs when an organization offer products, which is viewed by the target market consumers as superior. This has resulted to it as the primary factor that has allowed firms to thrive in an ever-changing market environment. David (2011) further outlined that competitive advantage in organisation is when the management develops a strategy that make it attract more customers because of high quality products and services.

Porter (1985) further noted that competitive advantage is largely given by the competitive scope. Therefore, the institution can either choose a broad target market or select a particular market niche. Besides, Porter noted that competitive advantage is basically anchored in the value created by the company for its consumers, which surpasses the cost incurred by the organization in its development. To achieve this, a firm ought to have the capabilities of delivering a similar advantage as the competitor through a lower cost (cost advantage), which attained by differentiation. According to Calantone (2000), creating different strategies has allowed business to remain competitive and maintain its competitive advantage.

The low-cost strategy offers a competitive advantage that has not been used by other organizations. Muñoz and Kimmitt (2019) argued that it's improbable for cost leadership approaches to provide a competitive advantage. However, resource scarcity has acted as a primary impediment which has forced firms to stick to one approach of competitive advantage. Leiblein, Chen, and Posen (2017) hints that technology and market differentiation are some of the common areas used by companies. For instance, offering of

promos, strong development of brands names and innovative element are typical ways differentiating. Therefore, there are different ways that firms can use to develop a competitive advantage.

2.5 Digital Technology and Competitive advantage in Organizational Management

The changes in the digital technology have transformed the world of business, according to Riyanto et al. (2018) the era of internet, which is noted as the stage four era, has taken business performance in another level. There is a direct correlation between the level of digital technology and competitive advantage in firms. Dang (2015) indicated that most businesses are using digital technology to develop a competitive advantage by a focus on differentiation and lowering the cost. Most digital technologies improve the productivity of an organization by reducing the cost of running different business practices. The use of mobile applications has allowed banks to gain competitiveness, especially by improving convenience because customers are able to carry out their normal transactions such as loan processing, bill payments, funds transfer, withdrawals. The advancement in technology has formed a primary basis of competitive advantage in the organizations.

Technology has played a critical role in enabling companies to differentiate their services and products making them unique which also attracts customers. Kenya banks have managed to incorporate the mobile banking services and use of applications which was driven by the uniqueness of the technology. The digital technology methods such as mobile banking, internet banking, use of ATMs, agency banking, and machine learning technology has transformed the banking sector by improving efficiency.

2.6 Empirical studies and Research gaps

Several studies have focused on the banking sector with a compelling interest in the ways of improving service delivery to consumers. Digital technologies such as mobile banking technology have resulted to the profitability of the banks, money exchange, customer service, and the general operations of the banks. According to Chatain (2008) a research conducted on the integrity of financial service using mobile phones highlighted that cell phone played an essential role in mitigating risks associated with money. Other studies have determined the great potential of mobile phones, especially on financial transactions. The mobile phones are affordable to consumers in the remote areas where banks are non-existence. Malhotra and Singh (2009) further reviewed the effect of web-based achievement on bank achievement, whereby banks with larger web banks recorded a higher efficiency and profitably.

The research conducted by Jepleting, Sabgoro, and Bureti in 2013 endeavored to determine how mobile banking has contributed to customer satisfaction in Eldoret town. The study was descriptive in nature, and more than 200 hundred respondents were selected purposely to fit the objective of the study. Most of them were employees of the banks, customer, and agents, self-administered questionnaires were used. The finding of this research noted that everyone who used mobile banking services was comfortable with the efficiency and reliability of the technology. The knowledge on banking technology has expanded over the last six years hence the study will conceptualize a framework to explain the relation between the independent variable (Digital Technology) and the dependent variables (Competitive Advantage).

The concept of competitive advantage also improves performance in other sectors of the economy whereby the element of cost leadership, focus, and differentiation are implemented. For instance, in India competitive advantage has been used to improve the quality of medical care provides to patients. According to Ranjhan and Mallick (2018), a large portion of health institutions is adopting technologies to enhance efficiency and eventually improve the quality of services. Additionally, information technologies firms have used a competitive advantage as one tool for gaining a broader market share. Research by Nan and Tanriverdi (2017) indicated that a large portion of IT firms has leverage on digital technology to improve the overall performance. Therefore, the concept is not limited to the banking sector, digital technology can create competitiveness in all area of the economy

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The section identifies the methods and procedures that the researcher used to undertake this study, explaining the rationale for the selected procedures and demonstrating why they are appropriate in addressing the research problem in order to arrive at the most relevant conclusion. This study employed the inductive approach and makes use of both quantitative and qualitative data in a mixed methods research strategy.

3.2 Research Design

A research design is a plan, which is used to generate responses to a research problem. In this study. The study used a descriptive cross-sectional survey because it involved the collection of data from a population at a specific time. This approach selects the participants based on the specific variable of interest according to Marsden & Wright, (2010). The design took place at single point and allowed the researcher to focus on the variables. The study used this research design because it is cheap and allowed the researcher to collect information. Descriptive cross survey helped to obtain information on different variable.

3.3 Population of the Study

Study population is defined as collection of individuals or objects that consist of have similar characteristics. The individuals in certain population usually have a common, binding characteristic or trait. “Population is the entire group of people, event or thing of interest the researcher wishes to investigate”. Mugenda and Mugenda (1999). Similarly,

Kothari (2013) noted population as “an entire group of individuals, events or objects having common observable characteristics.” The population of study was all the registered commercial Banks in Kenya, all these Banks participated in the study. As of September 2019, the Central Bank of Kenya has registered forth three commercial banks, all the commercial banks were part of the study population.

3.4 Data Collection

There are several data collection instruments used by the researcher to acquire data. According to Kothari (2013), the variables of study determine the method of data collection. The time available for the study also determines the method of data collection instrument. For instance, questionnaires are used in cases whereby the researcher has a limitation of time. On the other hand, interviews are appropriate when the study population is available, and researcher has adequate time.

Open ended questionnaire was used to gather the primary data from commercial banks. The questionnaire was administered by “drop and pick method”. The open-ended questions where the 5-point Likert scale was used to measure independent variables. The questionnaire was divided into four sections five sections. Section A; consisted of respondents’ demographic information while Section B; Automated teller machines Section C; Internet banking, Section D; Mobile banking and Section E; Agency banking. While the secondary data collection from reviewed journals and websites of the various banks.

3.5 Data Analysis

Collected questionnaires were edited and cleaned for completeness in preparation for coding. They were coded and keyed into the SPSS version 22, for analysis. Descriptive statistics such as means, standard deviation and frequency distribution were used to analyze the data while percentages and frequency tables were used for data presentation.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

This chapter present the findings on the effect of digital technology on the competitive advantage of Kenyan banks. The research was conducted on a sample of 43 respondents to which questionnaires were administered. The chapter introduces the analysis conducted as per the research objectives. Findings from open-ended questions were presented in prose.

4.2 Response Rate of the Study

This part analyzes information on the questionnaires that were returned from the field. Findings on filled in questionnaires and unreturned questionnaires are presented in Table 4.1.

Table 4.1. Response Rate

Response	Frequency (n)	Percentage (%)
Filled in questionnaires	38	88.4
Un returned questionnaires	5	11.6
Total Response Rate	43	100

Out of the sampled population, 38 questionnaires were returned duly filled in making a response rate of 88.4%. The response rate was representative and was adequately used to answer the research questions. A Response rate above 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent (Kothari, 2009).

4.3. Respondents Profile

The respondents' personal information included gender, age, highest academic qualification and the length of working in the bank.

4.3.1. Respondents Gender

The respondents were requested to indicate their gender. From the findings, majority (59%) of the respondents were male while 41% of the respondents were female.

4.3.2. Respondent Age

The study sought to establish the age of the respondents and the findings are as shown in Table 4.2.

Table 4.2. Distribution of Respondents by Age

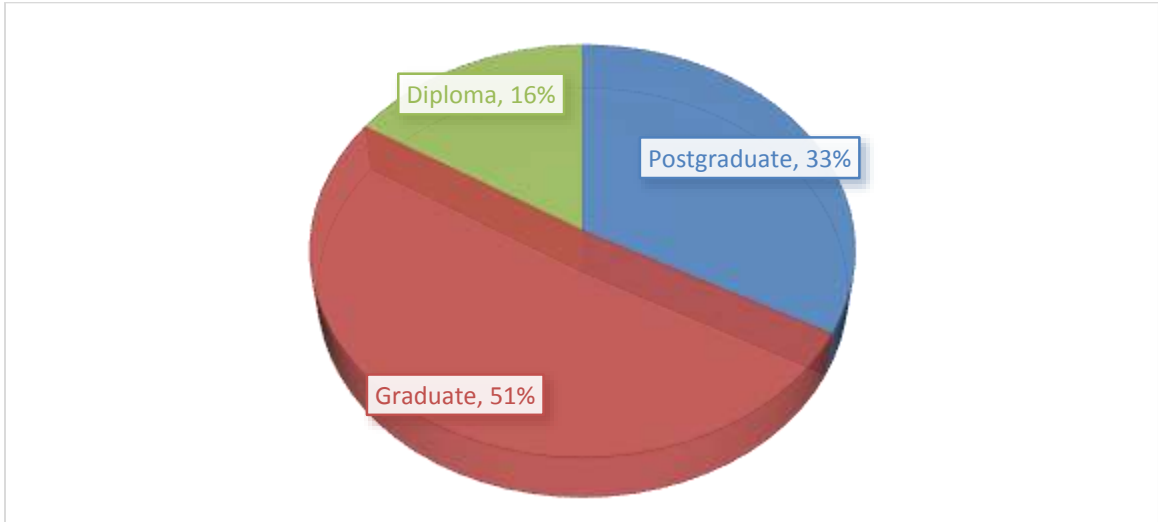
Age of Respondents	Frequency(n)	Percentage (%)
20-30 years	5	13.2%
30-40 years	20	52.6%
40-50 years	11	28.9%
50-60 years	2	5.3%
Total	38	100%

According to the findings, majority (52.6%) of the respondents were aged between 30-40 years, 28.9% were between 40-50 years, 13.2% were 20-30 years, while 5.3% were over between 50-60 years. This depicts that most of the respondents were aged enough and thus could offer high quality information because of their experience.

4.3.3. Respondent Level of Education

The respondents were requested to indicate their level of education. The findings are shown in Figure 4.1.

Figure 4.1. Distribution of participants by Level of Education



From the findings, majority (51%) of the respondents were graduates, 33% were post graduates, while 16% had diploma level of education. This implies that respondents were well knowledgeable and hence higher chances of getting reliable data.

4.3.4. Respondent Duration of Work in the Bank

The study sought to establish the respondent duration of work in the bank and the findings are as shown in Table 4.3

Table 4.3. Respondent Duration of Work in the Organization

Duration	Frequency(n)	Percentage (%)
Less than 1 year	2	5.3%
1-5 years	3	7.9%
6-10 years	22	57.9%
Over 10 years	11	28.9%
Total	38	100%

From the findings majority (57.9%) of the respondents indicated that they had worked in the bank for a duration between 6-10 years, 28.9% indicated over 10 years, 7.9% indicated 1-5 years, while 5.3% indicated less than one year. This depicts that the respondents had worked in the bank for a sizeable duration of time and thus had a clear understanding of effect of digital technology on the competitive advantage of Kenyan banks.

4.4. Effect of Digital Technology on Competitive Advantage in Kenyan Banks

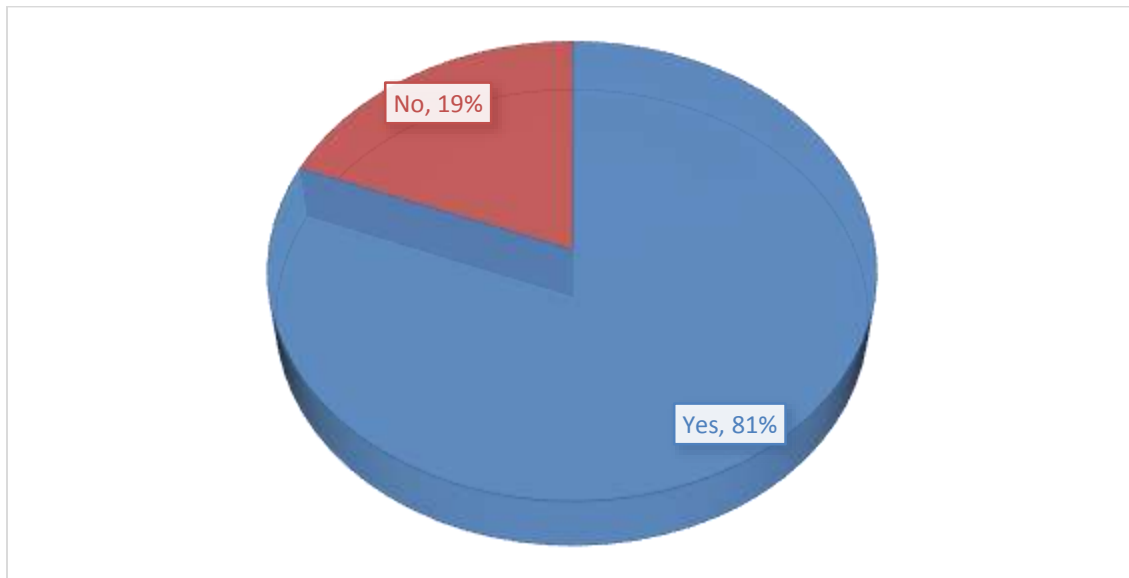
This section presents findings on the effect of digital technology on competitive advantage in Kenyan Banks. The findings are discussed in the subsequent sections:

4.4.1. Automated Teller Machines

Use of ATMS in Service Delivery

The respondents were requested to indicate whether the use of ATMs in service delivery influences the competitive advantage of the bank. The findings are shown in Figure 4.2.

Figure 4.2. Use of ATMS in Service Delivery



From the findings majority (81%) of the respondents indicated that the use of ATMs in service delivery influences the competitive advantage of the bank, while 19% were of the contrary opinion. This depicts that the use of ATMs in service delivery influences the competitive advantage of the bank. The use of ATM has helped the bank in simplifying customer banking experience and lowering the costs of transactions for example the electronic withdrawal of cash across the ATM has resulted into reduction of costs. This implied that the usage of ATMs had been a source of competitive advantage at the various commercial banks. The finding concurred with Stanley (2006) who found that usage of ATMs influence achievement of competitive advantage in the commercial banks. This is

because ATM usage results into reduced distribution costs, replaced overhead-heavy bank branches, increased returns on investment due to reduction of the cost of acquiring new machines, branches and bank branch staff, improved customer satisfaction, lowered the cost of bank transaction and increased the bank returns over its rivals in the market.

Customer Services at the Bank

The respondents were requested to indicate the services customers mostly use the ATMs for in the bank. The findings are shown in Table 4.4.

Table 4.4. Customer Services at the Bank

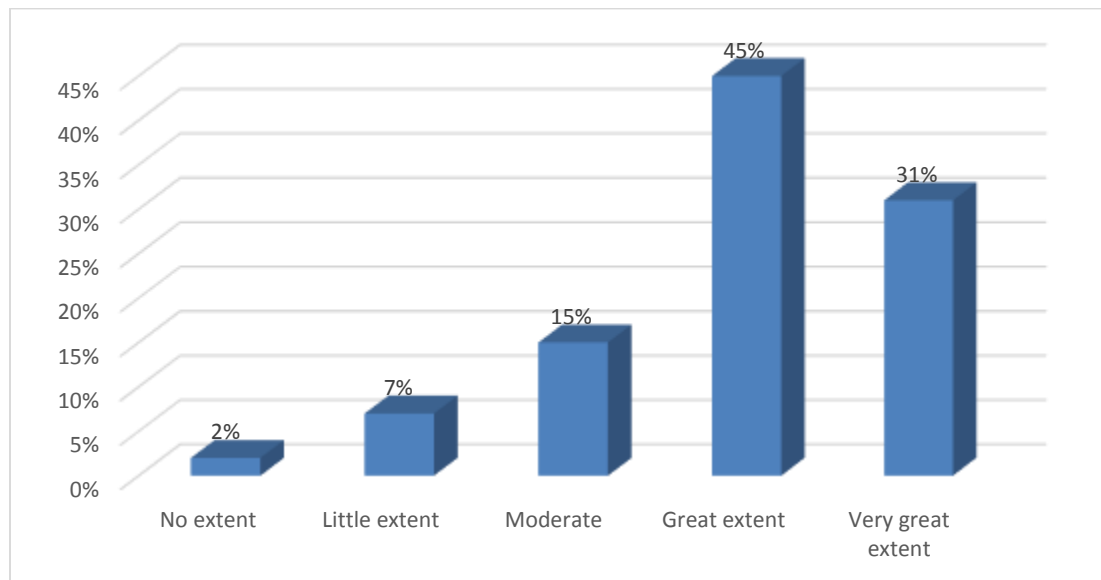
Service	Frequency	Percentage
Cash withdrawal	27	71.1
Funds transfer	6	15.8
Cash deposits	4	10.5
Payment of utility bills	1	2.6
Total	38	100

From the findings majority (71.1%) of the respondents indicated that the customer use ATMs for cash withdrawal from the bank, 15.8% indicated funds transfer, 10.5% indicated cash deposits, while 2.6% indicated payment of utility bills. This depicts that customers mostly used ATMs for cash withdrawal from the bank.

Extent of Influence of ATM Use on Competitive Advantage

The respondents were requested to indicate to what extent does the use of ATMs in service delivery influences the competitive advantage of the bank. The findings are shown in Figure 4.3.

Figure 4.3. Extent of Influence of ATM Use on Competitive Advantage



From the findings most (45%) of the respondents indicated to a great extent that the use of ATMs in service delivery influences the competitive advantage of the bank, 31% indicated to a very great extent, 15% indicated moderate extent, 7% indicated little extent, while 2% indicated no extent. This depicts that to a great extent that the use of ATMs in service delivery influences the competitive advantage of the bank.

Extent of Agreement on Impact of Automated Teller Machines

The respondents were requested to indicate the extent to which they agree with statements on automated teller machines as reflected in the bank. The responses were placed on a five likert scale where 1=strongly disagree, 2-disagree, 3-moderate, 4=agree, while 5=strongly agree. The findings are shown in Table 4.5.

Table 4.5. Extent of Agreement on Impact of Automated Teller Machines

Statements	Mean	Std. Dev
Banks utilize ATMs to gain competitive advantage in the industry	4.27	0.5324
Combinations of ATMs services and human tellers lead to more productivity for the bank during banking hours	4.22	0.5632
Use of ATMs saves customers time in service delivery as alternative to queuing in bank halls	4.34	0.5002
ATMs are a cost-efficient way of yielding higher productivity as they achieve higher productivity per period of time than human tellers	3.99	0.5125
Use of ATMs brings continual productivity for the banks even after banking hours	4.14	0.5324
Use of ATMs is a symbol of technological advancement of the bank	4.22	0.5976
Use of ATMs helps the bank attain efficiency in delivering customer services	4.04	0.5189
ATMs increase accessibility of the bank services to the customers	3.97	0.5128

From the findings the respondents agreed that use of ATMs saves customers time in service delivery as alternative to queuing in bank halls (mean=4.34), followed by banks utilize ATMs to gain competitive advantage in the industry (mean=4.27), combinations of ATMs services and human tellers lead to more productivity for the bank during banking hours and use of ATMs is a symbol of technological advancement of the bank respectively (mean=4.22), use of ATMs brings continual productivity for the banks even after banking hours (mean=4.14), use of ATMs helps the bank attain efficiency in delivering customer services (mean=4.04), ATMs are a cost-efficient way of yielding higher productivity as they achieve higher productivity per period of time than human tellers (mean=3.99), and that ATMs increase accessibility of the bank services to the customers (mean=3.97). This depicts that use of ATMs saves customers time in service delivery as alternative to queuing in bank halls. The finding concurred with Stanley (2006) who found that usage of ATMs influence achievement of competitive advantage in the commercial banks. This is because ATM usage results into reduced distribution costs, replaced overhead-heavy bank branches, increased returns on investment due to reduction of the cost of acquiring new machines, branches and bank branch staff, improved customer satisfaction, lowered the cost of bank transaction and increased the bank returns over its rivals in the market.

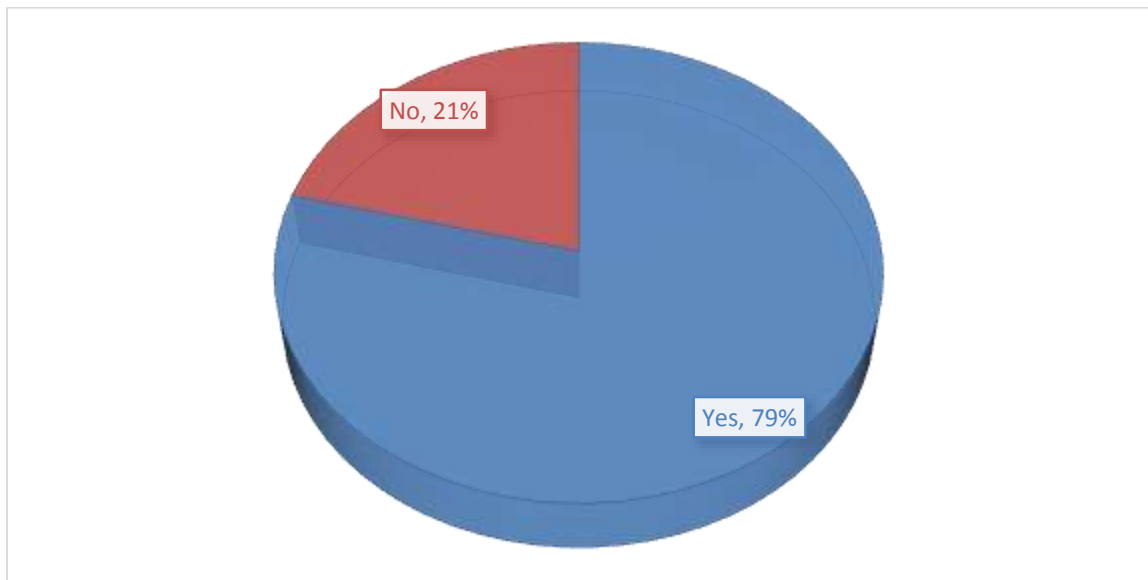
4.4.2. Mobile Banking

This section presents findings on the impact of mobile banking on competitive advantage. The findings are discussed in the subsequent sections:

Use of Mobile Banking in Service Delivery

The respondents were requested to indicate whether the use of mobile banking in service delivery influences the competitive advantage of the bank. The findings are shown in Figure 4.4.

Figure 4.4. Use of Mobile Banking in Service Delivery



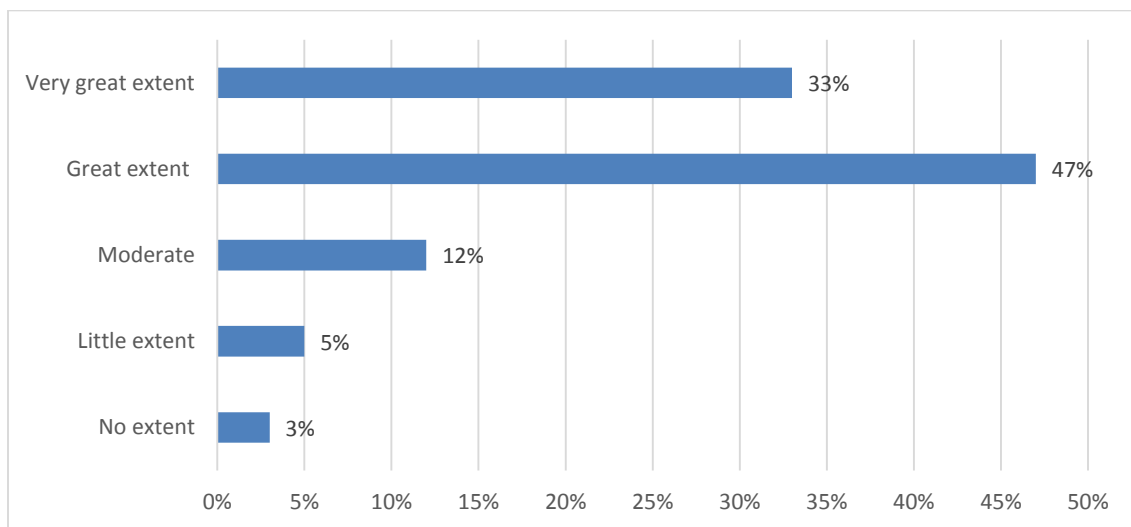
From the findings majority (79%) of the respondents indicated that the use of mobile banking in service delivery influences the competitive advantage of the bank, while 21% were of the contrary opinion. This depicts that the use of mobile banking in service delivery influences the competitive advantage of the bank. The respondents indicated that the use of mobile banking has managed to enhance convenience and flexibility in offering financial services to its customers. The respondents also noted that mobile banking had an impact in the achievement of competitive advantage by improving the quality of customer service through reduction of the operational costs and thereby promoting cost leadership in the bank. The findings concurred with Furst et. al (2011) who found that mobile banking

service adopted by several commercial banks in U.S. national banks resulted into higher non-interest income, lower transaction expenses by 21% and also ensured the banks achieved 45% of the market share.

Extent of Influence of Mobile Banking Use on Competitive Advantage

The respondents were requested to indicate to what extent does the use of mobile banking in service delivery influences the competitive advantage of the bank. The findings are shown in Figure 4.5.

Figure 4.5. Extent of Influence of Mobile Banking Use on Competitive Advantage



From the findings most (47%) of the respondents indicated to a great extent that the use of mobile banking in service delivery influences the competitive advantage of the bank, 33% indicated to a very great extent, 12% indicated moderate extent, 5% indicated little extent, while 3% indicated no extent. This depicts that to a great extent that the use of mobile banking in service delivery influences the competitive advantage of the bank.

Extent of Agreement on Impact of Mobile Banking

The respondents were requested to indicate the extent to which they agree with statements on mobile banking as reflected in the bank. The responses were placed on a five likert scale where 1=strongly disagree, 2-disagree, 3-moderate, 4=agree, while 5=strongly agree. The findings are shown in Table 4.6.

Table 4.6. Extent of Agreement on Impact of Mobile Banking

Statements	Mean	Std. Dev
Mobile banking provides increase convenience, expand access and significantly save time for the customers	4.24	0.2139
The costs of delivering mobile-based services are substantially lower than those of branch based services	3.90	0.2104
Even after banking hours mobile-banking accrues continual productivity for the bank	4.18	0.1963
Complexity of mobile-banking is often inversely related to a consumer's experience with technology	4.12	0.2009
Mobile-banking is difficult for first-time users	4.05	0.2210
Mobile banking enhances market expansion/partnership, efficiency in service delivery, and better access to information	3.97	0.1382
Mobile banking attract new customers and to retain existing customers	4.21	0.2109

From the findings the respondents agreed that mobile banking provides increase convenience, expand access and significantly save time for the customers (mean=4.24), mobile banking attract new customers and to retain existing customers (mean=4.21), even after banking hours mobile-banking accrues continual productivity for the bank (mean=4.18), complexity of mobile-banking is often inversely related to a consumer's experience with technology (mean=4.12), mobile-banking is difficult for first-time users (mean=4.05), mobile banking enhances market expansion/partnership, efficiency in service delivery, and better access to information (mean=3.97), and that the costs of delivering mobile-based services are substantially lower than those of branch based services (mean=3.9). This depicts that mobile banking provides increase convenience, expand access and significantly save time for the customers. The findings supported Furst et. al, (2011) who found that telephone banking increased profitability level, increased non-interest income, lowered transaction expenses by 21% and also ensured the banks achieved 45% growth in market share in Commercial banks in U.S. national banks.

Other Ways through which Mobile Banking Influences the Competitive Advantage

The respondents were requested to indicate other ways in which mobile banking influences the competitive advantage of the bank. According to the respondents mobile banking has led to increased bank income level, increased bank telephone deposits, and improved accessibility of banking services to a great extent. The respondents further indicated that through the use of mobile banking, the bank reduced the costs of delivering bank services, increased remote bank branches and led to increase in bank customer base. Mobile banking has enabled the bank to deliver differentiated financial products and services such as Mobile banking and Bankika. This clearly indicated that mobile banking has been used in creating

competitive advantage. Similar findings were revealed by Mukherjee et. al. (2003) who carried out a study among Malaysia commercial banks and found that telephone banking led to improved convenience, expanded access and resulted into significant time saving on the part of the bank customers while accessing banking services.

4.4.3. Internet Banking

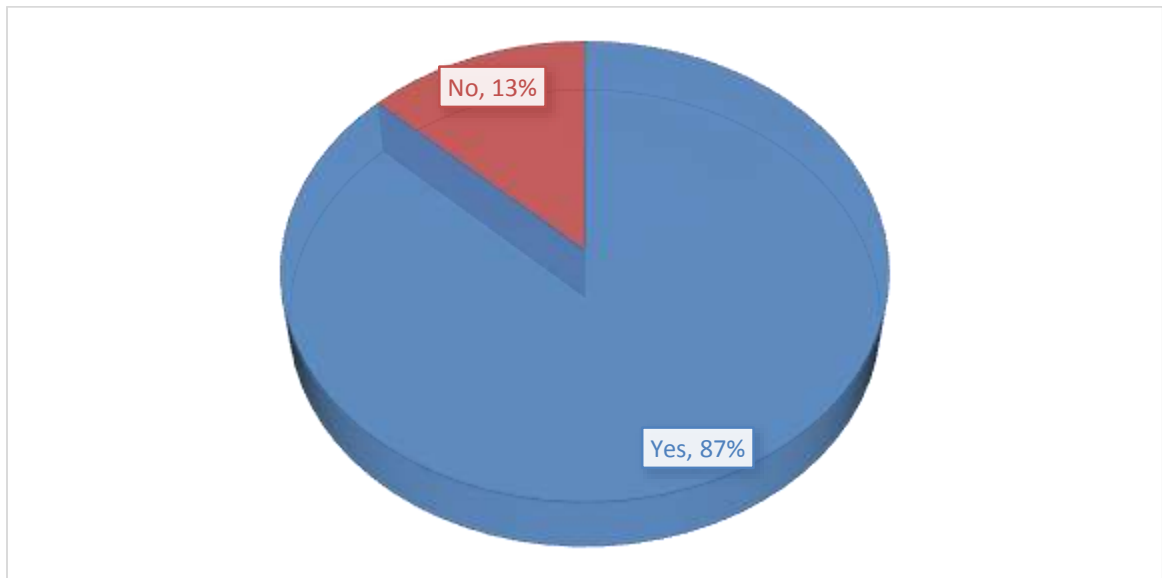
This section presents findings on the impact of internet banking on competitive advantage.

The findings are discussed in the subsequent sections:

Use of Internet Banking in Service Delivery

The respondents were requested to indicate whether the use of internet banking in service delivery influences the competitive advantage of the bank. The findings are shown in figure 4.6.

Figure 4.6. Use of Internet Banking in Service Delivery

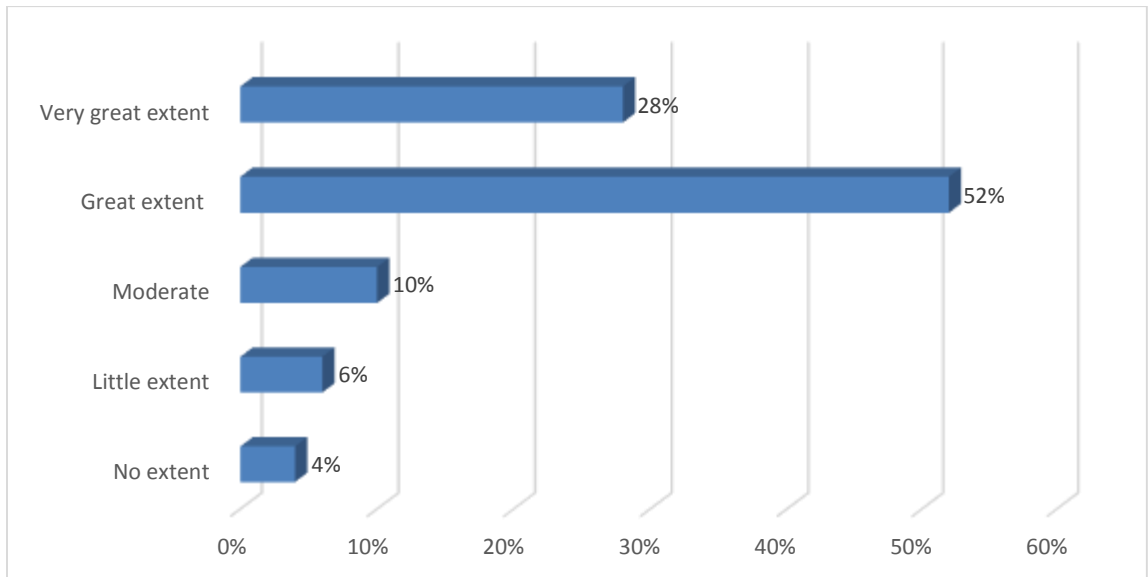


From the findings majority (87%) of the respondents indicated that the use of internet banking in service delivery influences the competitive advantage of the bank, while 13% were of the contrary opinion. This depicts that the use of internet banking in service delivery influences the competitive advantage of the bank. The respondents further indicated that internet banking acted as a tool used to offer virtual banking functions at Kenya commercial banks. Internet banking led to E-banking which has made it easy to transact and lowered the cost of transactions, either through internet, mobile applications or other electronic delivery channels. The findings were similar to Fruhling & Digman (2000) who found that bank adoption of internet banking, enhanced bank productivity, speed and efficiency in service delivery and led to an improvement in customer services, 25% increase in market share. Bank through its online banking adoption reported enhanced bank productivity, speed and efficiency in service delivery and improvement in customer services.

Extent of Influence of Internet Banking Use on Competitive Advantage

The respondents were requested to indicate to what extent does the use of internet banking in service delivery influences the competitive advantage of the bank. The findings are shown in Figure 4.7.

Figure 4.7. Extent of Influence of Internet Banking Use on Competitive Advantage



From the findings most (52%) of the respondents indicated to a great extent that the use of internet banking in service delivery influences the competitive advantage of the bank, 28% indicated to a very great extent, 10% indicated moderate extent, 6% indicated little extent, while 4% indicated no extent. This depicts that to a great extent that the use of internet banking in service delivery influences the competitive advantage of the bank.

Extent of Agreement on Impact of Internet Banking

The respondents were requested to indicate the extent to which they agree with statements on internet banking as reflected in the bank. The responses were placed on a five likert scale where 1=strongly disagree, 2-disagree, 3-moderate, 4=agree, while 5=strongly agree. The findings are shown in Table 4.7.

Table 4.7. Extent of Agreement on Impact of Internet Banking

Statements	Mean	Std. Dev
Internet banking which solely focus on cost reduction may lead to high supply chain effectiveness	4.16	0.1988
Internet banking offers more convenience and flexibility to customers coupled with a virtually absolute control over their banking	4.04	0.1219
Internet banking is the most cost-efficient technological means of yielding higher productivity	4.09	0.2219
Internet banking eliminates the barriers of distance/time and provides continual productivity for the bank to unimaginable distant customers	3.88	0.2001
Adoption of Internet banking is inhibited by difficulty in use and security concern	3.79	0.2319

From the findings the respondents agreed that internet banking which solely focus on cost reduction may lead to high supply chain effectiveness (mean=4.16), internet banking is the most cost-efficient technological means of yielding higher productivity (mean=4.09), internet banking offers more convenience and flexibility to customers coupled with a virtually absolute control over their banking (mean=4.04), internet banking eliminates the barriers of distance/time and provides continual productivity for the bank to unimaginable distant customers (mean=3.88), and adoption of Internet banking is inhibited by difficulty in use and security concern (mean=3.79). This depicts that internet banking which solely focus on cost reduction may lead to high supply chain effectiveness.

Other Ways in Which Internet Banking Influences the Competitive Advantage

The respondents were requested to indicate other ways in which internet banking influences the competitive advantage of the bank. According to the respondent's adoption of Internet Banking has managed to enhance convenience and flexibility in offering financial services to the bank customers. Internet Banking has had an impact in the achievement of competitive advantage by improving the quality of customer service, reducing the operational costs and thereby promoting cost leadership in the bank. It has also led to an increase in non-funded income and lowered the cost of transmitting information thus lowering the marketing and advertisement cost through the cheaper distribution channels such as Mobile phones and online banking. Internet banking also led to more savings by the bank resulting from reduced overhead expenses such as inventory, retail space and personnel.

4.4.4. Agency Banking

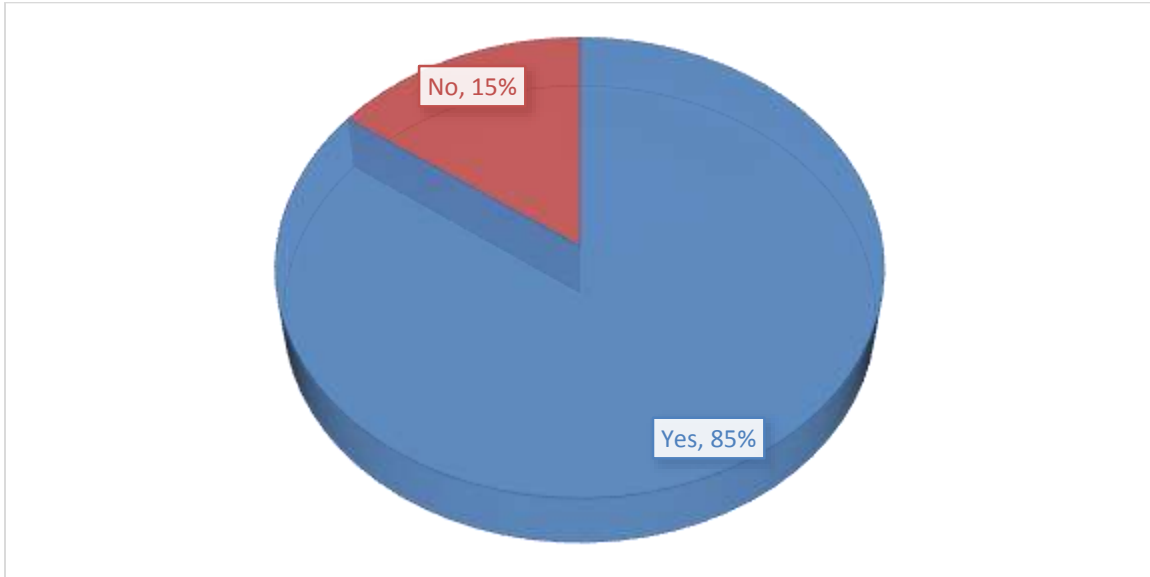
This section presents findings on the impact of agency banking on competitive advantage.

The findings are discussed in the subsequent sections:

Use of Agency Banking in Service Delivery

The respondents were requested to indicate whether the use of agency banking in service delivery influences the competitive advantage of the bank. The findings are shown in Figure 4.8.

Figure 4.8. Use of Agency Banking in Service Delivery

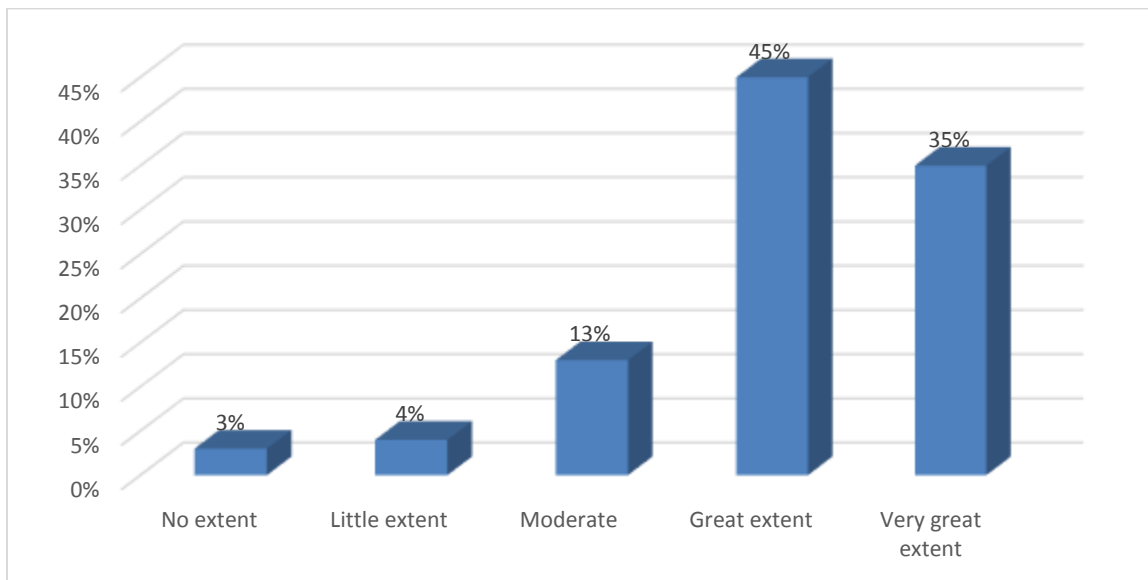


From the findings majority (85%) of the respondents indicated that the use of agency banking in service delivery influences the competitive advantage of the bank, while 15% were of the contrary opinion. This depicts that the use of agency banking in service delivery influences the competitive advantage of the bank. The respondents indicated that the networking of bank branches assisted the bank in offering quicker rate of inter-branch transactions as it eliminates geographical distance barrier. This implied that use of branched Network System helps the bank in creating competitive advantage in the market. The findings were similar to Grandon & Pearson (2004) findings who indicated that use of Wide Area Network (WAN) by commercial banks in Mexico led to quicker rate of inter-branch 30 transactions, eliminated distance and time wastage thus improving productivity per time period and reducing costs of operation thereby influencing competitive advantage over the rival banks which had not embraced branch networking of branches.

Extent of Influence of Agency Banking Use on Competitive Advantage

The respondents were requested to indicate to what extent does the use of agency banking in service delivery influences the competitive advantage of the bank. The findings are shown in figure 4.9.

Figure 4.1. Extent of Influence of Agency Banking Use on Competitive Advantage



From the findings most (45%) of the respondents indicated to a great extent that the use of agency banking in service delivery influences the competitive advantage of the bank, 35% indicated to a very great extent, 13% indicated moderate extent, 4% indicated little extent, while 3% indicated no extent. This depicts that to a great extent that the use of agency banking in service delivery influences the competitive advantage of the bank.

Extent of Agreement on Impact of Agency Banking

The respondents were requested to indicate the extent to which they agree with statements on agency banking as reflected in the bank. The responses were placed on a five likert scale where 1=strongly disagree, 2-disagree, 3-moderate, 4=agree, while 5=strongly agree. The findings are shown in Table 4.8.

Table 4.8. Extent of Agreement on Impact of Agency Banking

Statements	Mean	Std. Dev
Agency banking lead to simulated division of labour among bank branches and a positive impact on productivity among the branches	3.70	1.0394
Agency banking curtails customer travel distance to bank branches and thus offers more time for customers' productive activities	3.19	0.9127
It offers convenience of many possible points of contact with the bank	4.13	0.8020
Customers select their bank primarily due to its location	3.99	0.8334
Agency banking continue to be an effective channel for generating retail banking revenues	4.34	0.7268

From the findings the respondents agreed that agency banking continue to be an effective channel for generating retail banking revenues (mean=4.34), followed by it offers convenience of many possible points of contact with the bank (mean=4.13), customers select their bank primarily due to its location (mean=3.99), agency banking lead to simulated division of labour among bank branches and a positive impact on productivity among the branches (mean=3.7), agency banking curtails customer travel distance to bank branches and thus offers more time for customers' productive activities (mean 3.19). This

depicts that agency banking continue to be an effective channel for generating retail banking revenues.

Other Ways in Which Agency Banking Influences the Competitive Advantage

The respondents were requested to indicate other ways in which agency banking influences the competitive advantage of the bank. According to the respondents the networking of bank branches assisted the bank in offering quicker rate of inter-branch transactions as it eliminates geographical distance barrier. This implied that use of branched Network System helps the bank in creating competitive advantage in the market. The Wide Area Network (WAN) adopted by the bank helped in creation and sharing of centralized customer information and records thus lowering cost, saving time and providing convenience in providing bank transaction services to its customers.

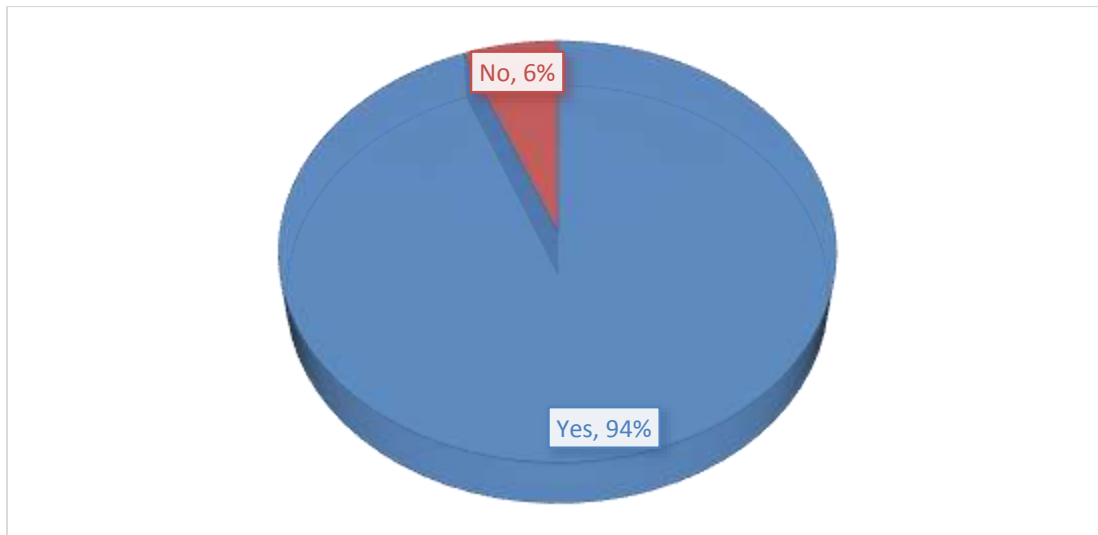
4.4.5. Competitive Advantage

This section presents findings on competitive advantage. The findings are discussed in the subsequent sections:

ICT based innovations and Competitive Advantage

The respondents were requested to indicate whether ICT based innovations have enhanced competitive advantage in the bank. The findings are shown in figure 4.10.

Figure 4.2. ICT based innovations and Competitive Advantage



From the findings majority (94%) of the respondents indicated ICT based innovations have enhanced competitive advantage in the bank while 6% were of the contrary opinion. This depicts that ICT based innovations have enhanced competitive advantage in the bank.

Extent of Agreement on Competitive Advantage and ICT Innovation

The respondents were requested to indicate the extent to which they agree with statements on competitive advantage and ICT innovation. The responses were placed on a five likert scale where 1=strongly disagree, 2-disagree, 3-moderate, 4=agree, while 5=strongly agree. The findings are shown in Table 4.12.

Table 4.3. Extent of Agreement on Competitive Advantage and ICT Innovation

Indicators of Competitive Advantage	Mean	Std. Dev
Service delivery	3.96	0.9583
Customer satisfaction	4.17	0.9060
Competitive advantage	3.35	1.4296
Communication	3.96	0.8894
Branch networking continue to be an effective channel for generating retail banking revenues	4.32	0.9235

From the findings the respondents agreed that branch networking continue to be an effective channel for generating retail banking revenues generating retail banking revenues (mean=4.32), followed by customer satisfaction (mean=4.17), service delivery and communication (mean=3.96), and competitive advantage (mean=3.35). This depict that branch networking continue to be an effective channel for generating retail banking revenues generating retail banking revenues.

4.5. Discussion of Findings

This section presents the discussion of findings on effect of digital technology on the competitive advantage of Kenyan banks. The discussion entails the comparison of the empirical literature and the findings of the study and also the findings of the study with the theories of the study.

Theories and the Findings of the Study

The study found that mobile banking had an impact in the achievement of competitive advantage by improving the quality of customer service through reduction of the operational costs and thereby promoting cost leadership in the bank. According to competitive advantage theory cost leadership has organizations offering the lowest possible prices and this helps it to gain more customers even though the profit per sale is low. Banks aim to attract a larger pool of clients if they offer their loans at the lowest possible interest rate (Riasi, 2015). This enables the bank to have a broad market. With a broad market, an organization can effectively compete with its competitors. In differentiation, organizations aim at making their product unique as a strategy of attracting customers.

The study also found that internet banking which solely focus on cost reduction may lead to high supply chain effectiveness. Internet Banking has managed to enhance convenience and flexibility in offering financial services to the bank customers. The findings are in agreement with Technology Diffusion Theory which states that many organizations have used internet technology as a way to improve their product and make it unique. In cost focus, organizational targets a specific niche and offer its products or services at the lowest possible prices. Differentiation focus focuses on building brand loyalty making a product unique.

The study found that ICT based innovations have enhanced competitive advantage in the bank. The study also found that branch networking continues to be an effective channel for generating retail banking revenues generating retail banking revenues. The findings are in agreement with competitive advantage theory which states that firms will maximize the

little advantage they have in order to access more market, which is termed as a competitive advantage. With the advancement of technology, organizations that are quick to adapt to a technology gain a competitive advantage over others.

Empirical Literature and the Findings of the Study

The use of ATM has helped the bank in simplifying customer banking experience and lowering the costs of transactions for example the electronic withdrawal of cash across the ATM has resulted into reduction of costs. This implied that the usage of ATMs had been a source of competitive advantage at the various commercial bank. The study found that customers mostly used ATMs for cash withdrawal from the bank. The study further found that to a great extent that the use of ATMs in service delivery influences the competitive advantage of the bank. The findings agree with a study by Ravi (2008) who stated that the use of computer networks, security algorithms, internet banking, ATMs, and mobile banking are an example of Technology, which has changed how banks operate in Kenya. Technology has allowed banks to lower risk associated with the provision of banking services because customers can do transactions on their own through the online banking accurately

The study also found that the use of mobile banking has managed to enhance convenience and flexibility in offering financial services to its customers. Mobile banking had an impact in the achievement of competitive advantage by improving the quality of customer service through reduction of the operational costs and thereby promoting cost leadership in the bank. The study found that mobile banking provides increase convenience, expand access and significantly save time for the customers. The study also found that through the use of

mobile banking, the bank reduced the costs of delivering bank services, increased remote bank branches and led to increase in bank customer base. Aludo (2017) indicated that banks must embrace digital changes to remain competitive and more importantly generate revenues. In response to this, a large portion of the banks have adopted the use of mobile banking to offer services such as account balance, bill payment alerts, account statement inquiries, receipts transactions, and other services. Hence this has been of convenience to the customers who do not need to visit the Banking hall because they are able to perform transactions and raise service requests at their comfort

The study found that to a great extent that the use of internet banking in service delivery influences the competitive advantage of the bank. The study also found that internet banking which solely focus on cost reduction may lead to high supply chain effectiveness. Internet Banking has managed to enhance convenience and flexibility in offering financial services to the bank customers. Internet Banking has had an impact in the achievement of competitive advantage by improving the quality of customer service, reducing the operational costs and thereby promoting cost leadership in the bank. The findings agree with a study by Dang (2015) who indicated that most digital technologies such as internet banking improve the productivity of an organization by reducing the cost of running different business practices. The use of mobile applications has allowed banks to gain competitiveness, especially by improving convenience because customers are able to carry out their normal transactions such as loan processing, bill payments, funds transfer, withdrawals. The advancement in technology has formed a primary basis of competitive advantage in the organizations.

The study also found that the networking of bank branches assisted the bank in offering quicker rate of inter-branch transactions as it eliminates geographical distance barrier. This implied that use of branched Network System helps the bank in creating competitive advantage in the market. The study found that to a great extent that the use of agency banking in service delivery influences the competitive advantage of the bank. Busch (2008), has outlined that most banks are using the internet to provide service to customers across different geographical locations. For example, Wide Area Network (WAN) and other forms of the network have been used to share information on consumers, thereby improving the provision of service in the long run. In addition to this, other online services, such as E-commerce, have allowed banks to provide different services and product to consumers.

The study found that ICT based innovations have enhanced competitive advantage in the bank. The study also found that branch networking continues to be an effective channel for generating retail banking revenues generating retail banking revenues. Leiblein, Chen, and Posen (2017) hints that technology and market differentiation are some of the common areas used by companies. For instance, offering of promos, strong development of brands names and innovative element are typical ways differentiating. Therefore, there are different ways that firms can use to develop a competitive advantage.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

This chapter presented summary, conclusion and recommendations on the effect of digital technology on the competitive advantage of Kenyan banks.

5.2. Summary of Findings

This section presents the summary of the findings. The study found that customers mostly used ATMs for cash withdrawal from the bank. The study further found that to a great extent that the use of ATMs in service delivery influences the competitive advantage of the bank. The study found that use of ATMs saves customers time in service delivery as alternative to queuing in bank halls. Mobile banking had an impact in the achievement of competitive advantage by improving the quality of customer service through reduction of the operational costs and thereby promoting cost leadership in the bank. The study found that to a great extent that the use of internet banking in service delivery influences the competitive advantage of the bank.

The study also found that internet banking which solely focus on cost reduction may lead to high supply chain effectiveness. Internet Banking has managed to enhance convenience and flexibility in offering financial services to the bank customers. Internet Banking has had an impact in the achievement of competitive advantage by improving the quality of customer service, reducing the operational costs and thereby promoting cost leadership in the bank. The study found that the use of agency banking in service delivery influences the competitive advantage of the bank. The study also found that the networking of bank

branches assisted the bank in offering quicker rate of inter-branch transactions as it eliminates geographical distance barrier.

5.3. Conclusion

The study concluded that usage of ATMs had been a source of competitive advantage at the various commercial bank. The study concluded that customers mostly used ATMs for cash withdrawal from the bank. The study further concluded that to a great extent that the use of ATMs in service delivery influences the competitive advantage of the bank. The study concluded that use of ATMs saves customers time in service delivery as alternative to queuing in bank halls.

The study concluded mobile banking provides increase convenience, expand access and significantly save time for the customers. The study also concluded that through the use of mobile banking, the bank reduced the costs of delivering bank services, increased remote bank branches and led to increase in bank customer base. Mobile banking has enabled the bank to deliver differentiated financial products and services such Mobi banking and Bankika. This clearly indicated that mobile banking has been used in creating competitive advantage.

The study concluded internet banking which solely focus on cost reduction may lead to high supply chain effectiveness. Internet Banking has managed to enhance convenience and flexibility in offering financial services to the bank customers. Internet Banking has had an impact in the achievement of competitive advantage by improving the quality of customer service, reducing the operational costs and thereby promoting cost leadership in the bank.

The study concluded networking of bank branches assisted the bank in offering quicker rate of inter-branch transactions as it eliminates geographical distance barrier. This implied that use of branched Network System helps the bank in creating competitive advantage in the market. The study concluded that to a great extent that the use of agency banking in service delivery influences the competitive advantage of the bank. The study also concluded that agency banking continue to be an effective channel for generating retail banking revenues.

5.4. Recommendation for the Study

In relation to the practitioners the study recommends that given that the traditional one-to-many way of sending messages to potential customers is no longer enough and should be complemented by collaborative communication media to achieve the most effective and competitive communication, management should increase their investment in digital platforms so as to be in a position to take full advantage of the digital technology potential and increase the competitive advantage of the banks.

In relation to regulators digital technology has greatly advanced playing a major role in improving the standards of service delivery in the financial institution sector and given that the high cost of acquiring the digital facilities and the lack of adequate IT infrastructure could act as a challenge to the adoption of digital advertising in Kenya, the study recommends that the government through the relevant ministries has to increase its investment in laying of the fiber optic cable so as to provide the necessary IT infrastructure that would reduce the costs associated with the adoption of the digital technology platforms by the commercial banks.

In relation to researchers due to the high growth rate of social communities most businesses ought to realize the potential of digital technology in reaching the larger audience. The study recommends that the sooner the researchers dive in and begin researching in the Digital Technology Platforms, the more successful they will be in the future. The use of digital communication platforms is important to commercial banks so as increase their visibility and increase their customer base.

5.5. Limitations of the Study

The main limitation of the study was in the inability to include other financial institutions as the case study focused on Kenya commercial banks only. The study would have covered more institutions across all sectors so as to provide a broader based analysis. However, resource constraints led to this limitation. The study faced time constraint challenges during the collection of information from the interviewees thus limiting the study from collecting information particularly where the interviewees were not available due to their tight work schedule.

The study also faced a limitation from uncooperative employees who were not willing to provide adequate information due to the perceived sensitivity of the information required for the study. The researcher explained to the respondents that the information they provided was to be held confidential and was for academic use only. This was also captured in the letter of introduction provided to the interviewee by the university administration.

5.6. Suggestion for Further Study

The study determined the influence of ICT in achieving competitive advantage at Kenya commercial banks. A further study should also be carried out to determine the influence of ICT in achieving competitive advantage at other sectors such as manufacturing companies. A further study should also be carried out to determine the relationship between information technology strategies and competitiveness in banking sector.

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APPENDICES

APPENDIX I: QUESTIONNAIRE

This questionnaire is for the purpose of the research only and the information you give will be treated confidentially. Please answer all the questions provided as honestly as possible, to the best of your knowledge.

SECTION A: DEMOGRAPHIC INFORMATION

(Tick (✓) the appropriate option (bracket))

1. Please tick against your gender

a) Male b) Female

2. How old are you?

a) 20 – 30 years b) 30 – 40 years

c) 40 – 50 years d) 50 – 60 years

3. What is your highest academic qualification?

a) Post Graduate b) Graduate

c) Diploma

d) Others (specify)

4. How long have you worked in this bank?

a) Less than 1 year b) 1-5 years

c) 6-10 years d) Over 10 years

SECTION B: THE IMPACT OF AUTOMATED TELLER MACHINES AND COMPETITIVE ADVANTAGE

5. Do you think the use of ATMs in service delivery influences the competitive advantage of your bank?

Yes [] No []

If yes, how does it influence the competitive advantage of your bank?

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

6. Which among the following services do customers mostly use the ATMs for in your bank?

Cash withdrawal [] Funds transfer [] Cash deposits []
 Payment of utility bills []

7. To what extent do the use of ATMs in service delivery influences the competitive advantage of your bank?

No extent [] Little extent [] Moderate []
Great extent [] Very great extent []

8. What is your level of agreement with the following statements given below as they are reflected in commercial banks? Use a scale of 1-5 where 1= Strongly disagree, 2-disagree, 3-moderately agree, 4-agree and 5= Strongly agree

	1	2	3	4	5
Banks utilize ATMs to gain competitive advantage in the industry					
Combinations of ATMs services and human tellers lead to more productivity for the bank during banking hours					
Use of ATMs saves customers time in service delivery as alternative to queuing in bank halls					
ATMs are a cost-efficient way of yielding higher productivity as they achieve higher productivity per period of time than human tellers					
Use of ATMs brings continual productivity for the banks even after banking hours					
Use of ATMs is a symbol of technological advancement of the bank					
Use of ATMs helps the bank attain efficiency in delivering customer services					
ATMs increase accessibility of the bank services to the customers					

9. Suggest other ways in which use of ATMs in service delivery in your organization influences the competitive advantage of your bank

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.....
.....

SECTION C: THE IMPACT OF MOBILE BANKING ON COMPETITIVE ADVANTAGE

10. Do you think the use of mobile banking in service delivery influences the competitive advantage of your bank?

Yes [] No []

If yes, how does it influence the performance of your bank?

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

11. To what extent do mobile banking in service delivery influence the competitive advantage in your organization?

No extent [] Little extent [] Moderate []
Great extent [] Very great extent []

12. What is your level of agreement with the following statements given below as they are reflected in commercial banks? Use a scale of 1-5 where 1= Strongly disagree, 2-disagree, 3-moderately agree, 4-agree and 5= Strongly agree

	1	2	3	4	5
Mobile banking provides increase convenience, expand access and significantly save time for the customers					
The costs of delivering mobile-based services are substantially lower than those of branch based services					
Even after banking hours mobile-banking accrues continual productivity for the bank					
Complexity of mobile-banking is often inversely related to a consumer's experience with technology					
Mobile-banking is difficult for first-time users					
Mobile banking enhances market expansion/partnership, efficiency in service delivery, and better access to information					
Mobile banking attract new customers and to retain existing customers					

13. Suggest other ways in which mobile banking in your organization influences the competitive advantage of your bank

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SECTION D: THE IMPACT OF INTERNET BANKING ON COMPETITIVE ADVANTAGE

14. Do you think the use of internet banking in service delivery influences the competitive advantage of your bank?

Yes [] No []

If yes, how does it influence the competitive advantage of your bank?

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.....

.....

15. To what extent do internet banking in service delivery influence in your organization?

No extent [] Little extent [] Moderate []

Great extent [] Very great extent []

16. What is your level of agreement with the following statements given below as they are reflected in commercial banks? Use a scale of 1-5 where 1= Strongly disagree, 2-disagree, 3-moderately agree, 4-agree and 5= Strongly agree

	1	2	3	4	5
Internet banking which solely focus on cost reduction may lead to high supply chain effectiveness					
Internet banking offers more convenience and flexibility to customers coupled with a virtually absolute control over their banking					

Internet banking is the most cost-efficient technological means of yielding higher productivity					
Internet banking eliminates the barriers of distance/time and provides continual productivity for the bank to unimaginable distant customers					
Adoption of Internet banking is inhibited by difficulty in use” and “security concern					

17. Suggest other ways in which internet banking in your organization influences the competitive advantage of your bank

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SECTION E: THE IMPACT OF AGENCY BANKING ON COMPETITIVE ADVANTAGE

18. Do you think that agency banking influences the competitive advantage of your bank?

Yes [] No []

If yes, how does it influence the competitive advantage of your bank?

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.....

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19. To what extent do agency banking influence competitive advantage in your organization?

No extent [] Little extent [] Moderate []
 Great extent [] Very great extent []

20. What is your level of agreement with the following statements given below as they are reflected in commercial banks? Use a scale of 1-5 where 1= Strongly disagree, 2-disagree, 3-moderately agree, 4-agree and 5= Strongly agree

	1	2	3	4	5
Agency banking lead to simulated division of labour among bank branches and a positive impact on productivity among the branches					
Agency banking curtails customer travel distance to bank branches and thus offers more time for customers' productive activities					
It offers convenience of many possible points of contact with the bank					
Customers select their bank primarily due to its location					
Agency banking continue to be an effective channel for generating retail banking revenues					

21. Suggest other ways in which agency banking in your organization influences the competitive advantage of your bank

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SECTION F: COMPETITIVE ADVANTAGE

22. Do you think ICT based innovations have enhanced competitive advantage in your organization?

Yes [] No []

23. Indicate the level to which the following indicators of competitive advantage have improved as a result of ICT innovation in your organization? Use a scale of 1-5

Indicators of Competitive Advantage	1	2	3	4	5
Service delivery					
Customer satisfaction					
Competitive advantage					
Communication					
Branch networking continue to be an effective channel for generating retail banking revenues					

THANK YOU FOR YOUR TIME AND PARTICIPATION

**APPENDIX II: DIGITAL TECHNOLOGY THAT HAS INFLUENCED THE
STUDY**

Digital Technology	Institution that implemented	Impact on competitive advantage
Mobile banking	Commercial banks	Positive
Automatic teller Machines (ATMs)	Commercial banks	Positive
Mobile banking applications	Equity Bank, Coop bank, Family Bank, among others	Positive
Automated customer service	Equity Bank, Standard chartered bank, Family Bank, Bank of Africa	Some the changes positive while other have failed

APPENDIX III: LIST OF COMMERCIAL BANKS IN KENYA

1. Kenya Commercial Bank Ltd
2. Consolidated Bank of Kenya Ltd
3. Equity Bank Ltd
4. Gulf African Bank Ltd
5. Cooperative Bank Ltd
6. Giro Commercial Bank Ltd
7. Standard Chartered Bank (K) Ltd
8. Equatorial Commercial Bank Ltd
9. Barclays Bank of Kenya Ltd
10. Fidelity Bank Ltd
11. CFC Stanbic Bank Ltd
12. Guardian Bank Ltd
13. NIC Bank Ltd
14. Victoria Commercial Bank Ltd
15. Diamond Trust Bank Ltd
16. Development Bank of Kenya Ltd
17. Commercial Bank of Africa Ltd
18. Habib A.G. Zurich
19. I&M Bank Ltd
20. K-Rep Bank Ltd
21. Citibank
22. Trans-National Bank Ltd

23. National Bank of Kenya Ltd
24. First Community Bank Ltd
25. Baroda Bank Ltd
26. Paramount Universal Bank Ltd
27. Chase Bank Ltd
28. Habib Bank Ltd
29. Bank of Africa Ltd
30. Oriental Commercial Bank Ltd
31. Prime Bank Ltd
32. Credit Bank Ltd
33. Jamii Bora Bank Ltd
34. Imperial Bank Ltd
35. Family Bank Ltd
36. Middle East Bank (K) Ltd
37. Bank of India
38. UBA Bank Kenya Ltd
39. Ecobank Kenya Ltd
40. Dubai Bank Ltd
41. African Banking Corporation Ltd
42. Charterhouse Bank Ltd
43. Fina Bank Ltd