ELECTRONIC BANKING CHANNELS AS A STRATEGY FOR GAINING COMPETITIVE ADVANTAGE IN BANKING SERVICES: A CASE OF KENYA COMMERCIAL BANK

BY

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UNITED STATES INTERNATIONAL UNIVERSITY – AFRICA

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A Research Report Submitted to the Chandaria School of Business in Partial Fulfillment of the Requirement for the Master’s Degree in Business Administration (MBA)

UNITED STATES INTERNATIONAL UNIVERSITY – AFRICA

SUMMER 2017
STUDENT’S DECLARATION

I, the undersigned, declare that this is my original work and has not been submitted to any other college, institution or university other than the United States International University - Africa in Nairobi for academic credit.

Signed: ________________________ Date: ________________________

Name: Christine Karimi Kiboori
ID No: 640028

This research report has been presented for examination with my approval as the appointed supervisor.

Signed: ________________________ Date: ________________________

Dr. James Ngari, PhD

Signed: ________________________ Date: ________________________

Dean, Chandaria School of Business
ABSTRACT

This study focused on assessing electronic banking channels as a strategy for gaining competitive advantage in banking services in Kenya Commercial Bank (KCB). The specific objectives that guided the study included: to highlight the key factors of e-banking as a competitive advantage tool at KCB, to determine the relationship between e-banking application and competitive advantage of KCB, to establish whether customer preferences influence electronic channels of banks, and to establish challenges and propose solutions to tap opportunities and solve the identified challenges at KCB.

This study used the descriptive research design. The population for the study was all the staff working at KCB whose total number was 235. The sampling frame came from the official list of employees working at KCB in 2017. The study used stratified sampling technique. For the sample size, the study selected 70% of the total population to be the representative which brought the sample size to 165 respondents. Primary data was collected using a self-administered questionnaire attached as Appendix I. Completed questionnaires were analyzed using Statistical Package for Social Science (SPSS). The study used statistical frequencies and percentages for analysis. For likert questions, the study employed the use of means and standard deviations to show the strength and the degree in response differences. Inferential analysis was conducted which entailed Pearson correlation coefficient used to examine the nature of relationships between study variables in terms of significant and insignificant factors. Multiple regression analysis was also be used to show the strength of existing relationships between the study variables, and data was presented using tables and figures.

The study shows that e-banking has become a full-fledged delivery and distribution channel at KCB as a financial products and service. Internet banking is convenient and reduces bank queuing as well as reducing geographical barriers. E-banking at KCB contributes to varying models of cash withdrawals and cash management, and it provides customers with the interactivity that attracts them to utilize the functions of e-banking. KCB consumers understand the meaning and functionality of the security features of e-banking, even though
they still have doubts about the trust ability of e-banking privacy policies. KCB assures its customers’ security through provision of privacy statement and information about the security of the shopping mechanisms, and the use of encrypted data packets.

The company’s technical direction and framework for technology is based on development service that is determined by its ICT strategy. ICT strategy supports the strategic objectives of the organization involving development of new and improved products and service capabilities. KCB’s large investments in complex ICT systems have increased its efficiency in creating entry barriers in the market and it is also used to reduce the cost of doing business by reducing transaction costs to both suppliers and customers. E-banking has ensured that KCB policy makers are focused on the growing demand in ICT skills, that they are constantly taking corrective steps to prepare the required numbers and quality beforehand. The e-banking strategy at KCB also focuses on being the low cost producer in the market. The bank emphasizes on the employment of highly experienced staff in online banking, development and refining of existing products and investment in organizational learning.

Electronic banking systems at KCB provide easy access to banking services, and thus leads to higher levels of customer satisfaction and retention. E-banking at KCB has reduced the loan processing time as borrowers loan applications are viewed by the loan processing and loan approval authority simultaneously. Tele-banking (telephone banking) has allowed consumers at KCB to call the bank with instructions to pay certain bills or to transfer funds between accounts. ATM services at KCB has significantly increased productivity during banking hours and they are a cost-effective way of achieving higher productivity per period of time. Personal Computer Banking has allowed KCB customers to perform a lot of retail banking functions by providing its consumers with the convenience of conducting many banking transactions electronically using the Internet.

Security of information is one of the biggest concerns of KCB’s customers who make use of e-banking, since they face the security risks of having unauthorized access into their banking accounts. As a bank, KCB provides a comprehensive explanation of their policies to their e-
banking customers, and their consumers have the right to opt out of certain parts of giving the bank their personal information which makes doing business over the Internet challenging for them. Breaches of security and disruptions to the system’s availability can damage KCB’s reputation, and their reliance on new technology to provide services makes security and system availability the central operational risk of their e-banking. KCB’s security practices are regularly tested and reviewed by outside experts to analyze network vulnerabilities and recovery preparedness, and their challenge is in the form of capacity planning that would address the increasing transaction volumes and new technological developments that take place more often.

KCB should pay special attention to convenience by providing its customers with electronic banking service at points which can be easily accessible. For instance, some ATMs should be installed in supermarkets, learning institutions and medical centers. The bank can also offer mobile applications that can be downloaded and be used in smartphones to allow users to access banking services from their gadgets
ACKNOWLEDGEMENT

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My sincere gratitude to my husband for his unending support and for being my cheerleader, and to my daughter for inspiring me to work harder everyday.
DEDICATION

I dedicate this project to the Almighty God for enabling me to complete this project. I also dedicate this to my husband and my daughter for giving me an easy time during my undertaking of this project. Lastly, my dedication to my parents for their encouragement during my studies.
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<td>ABA</td>
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<tr>
<td>ATMs</td>
<td>Automated Teller Machines</td>
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<td>AVR</td>
<td>Automated Voice Response</td>
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<td>KCB</td>
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<td>PC</td>
<td>Personal Computer</td>
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<td>SCA</td>
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<td>SMEs</td>
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<td>SPSS</td>
<td>Statistical Package for Social Science</td>
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<td>UK</td>
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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

Business is being revolutionized every day as a result of the influence of the Internet. Organizations have become leaner, meaner, more profitable and more competitive. New businesses have sprung up on the Internet without a physical presence (virtual stores). Some existing organizations have moved from a bricks and mortar format to a clicks-and-mortar format, whilst others have adopted a more conservative approach and have both a physical and a virtual presence. Banks are no different in catching the Internet bug. There are virtual banks, such as Egg in Britain (Business Report, 2000), Security First Network Bank in America, and Enba in Europe (Goldfinger, 2001), which only exist on the Internet, and there are banks which have a physical presence but offer most of their services online. In a study conducted by Singh (2001), examining the effectiveness of Internet marketing, it was found that of the respondents in that study, only 22.6 per cent banked on the Internet. Without a doubt, electronic banking (e-banking) has experienced an explosive growth and has transformed the traditional practices in banking (Barwise & Farley, 2005; Gonza’lez et al., 2008; Lichtenstein and Williamson, 2006). Brodie et al. (2007) speculated that these changes would lead to a massive shift in the marketing practices leading to superior business performance. It has become the main means for banks to market and sell their products and services (Amato-McCoy, 2005) and is perceived to be a necessity so as to stay profitable and successful (Gan et al., 2006).

The changes that are happening in the banking sector can be attributed to the increase in deregulation and globalization, major stimulus for rationalization, consolidation, and an increasing focus on costs (Ibrahim et al., 2006; Hernandez & Mazzon, 2007). One result of this has been the rapid development and use of various new and innovative technologies by banks in the form of electronic banking services (Pikkarainen et al., 2006). The implementation of e-banking, for example internet banking and the use of computer-based office banking software hold several advantages for banks. It improves the bank’s profit levels through the reduction of both variable and infrastructure costs, provides a source of
differentiation and competitive advantage, provides global reach, adds another communication and feedback channel, increases customer satisfaction through the reduction of waiting times and thus improving service performance, or otherwise enabling the bank to more fully realise its sales potential through the achievement of higher sales volume (Shamdasani et al., 2008).

Throughout the years, competition in the banking industry has grown dramatically. Almost daily, headlines in the business press portray the financial services industry under the threat of massive change. The financial services industry is changing fast and very noticeable. Old ways of doing business are disappearing rapidly. One of the driving forces behind the growing competition is the rapid development in the field of Information and Communication Technology (ICT) (Ruckes, 2004).

Competition is a fundamental problem facing all the participants in the banking industry in Kenya. The product they sell, money, is totally fungible. It makes no real difference what the customer or the bank does; the nature of money does not change. If the product cannot be differentiated then it must be possible to differentiate the service provided to the client in the handling, storage and investment of this most precious of commodities. In fact, even in the information technology sector there is virtually nothing any major bank can do that its competitors cannot match very quickly. There is also very little point in beginning a price war because again, the major banks are so nearly matched that any pricing initiative can be met by competition. The cost of trying to ‘buy business’ in this manner is simply too high. Commercial banks may not all compete head to head in every market segment, but they do in most of them. In fact, it is difficult to determine who the largest banks are and indeed, how large they really are. There are two real areas in which banks can compete, price or interest rate and credit quality. However, as the banking business becomes stronger and more lucrative, all the participants have become more aggressive. The banks are now offering more and more attractive rates to clients and pursuing clients more aggressively. They have also differentiated themselves in quality of service, technological innovations, training and
development of employees and the quality of staff hired to drive their strategic intents (Ruckes, 2004).

A firm would be said to possess a Sustainable Competitive Advantage (SCA) when it has value-creating processes and positions that cannot be duplicated or imitated by other firms in employee training, leadership quality, service quality and technology and innovations. Porter (1980) holds that the basic steps of establishing competitive advantage entail identifying unsatisfied need in the market, determining the specific success requirements of the market in meeting the unsatisfied needs, identifying the firm’s core competencies and determining how well they match with the success requirements of the market then ultimately establishing distinctive competencies which in this case would refer to things that the firm can do better than its competitors.

Issues affecting competitive advantage vary from regulatory, customer behavior, mobile technology and social media, industry consolidation as well as need for up-to-date core banking systems. Regulatory reforms have placed explicit caps on key sources of revenue which banks must contend with thus impacting their relationships with retail customers. Changing consumer behaviors and expectations imply consumers are saving more, spending less, and paying down debt. Consumer satisfaction levels are on the decline and the emergence of social media has created a new source of publicity with which banks must contend. Mobile technology and social media and with it, the explosive growth of smartphone technology has created a new distribution channel. Banks need an electronic banking strategy and it’s not just a matter of making online banking available on a smaller device. The social media explosion requires companies to monitor what is being said about them and to take advantage of this channel to build customer loyalty. Industry consolidation, and with it government-assisted deals continue to provide banks with a unique opportunity to gain market share. The winners will be the banks that can successfully make the whole greater than the sum of their parts and build loyalty with new customers (CBK, 2012).
Today’s retail banks are operating in a new banking environment which is surrounded by several key factors which create increased competition for the same market. The rapid diffusion of the internet, in particular, has revolutionized the delivery channels used by the financial services industry. Globally, the amount of consumers using Internet Banking (IB) has grown steadily from 34.4 million users in 2000 to 122.3 million users in 2004, with most users coming from Western Europe (International Data Corporation, 2005). Customers have become familiar with the use of electronic banking services and systems during the last years. The use of the Internet technology now provides consumers with the ability to bank, invest, purchase, distribute, communicate, explore from home, work, cafes, or virtually anywhere an Internet connection can be made. E-banking related technical issues may include developing an infrastructure to ensure 24-hour availability, integrating backend, front end and other supporting tools to create a seamless experience for the customer, and collection and analysis of data which enables the provision of timely information to the management for effective decision making.

Electronic Banking is a general term for the process by which a customer performs banking transactions electronically without visiting a brick-and-mortar institution. It is the use of electronic means to deliver banking services, mainly through the Internet. The term is also used to refer to Automated Teller Machines (ATMs), telephone banking, use of plastic money, mobile phone banking and electronic funds transfers (FinCen, 2000).

The explosion of mobile technology, combined with a surge in the popularity of social media outlets such as Facebook, YouTube, and Twitter, gives retail banks a new way to connect with consumers at all times - and a mandate to do so. Consumers are in the driver’s seat, and they are demanding that services come to them - when and where they want them - and not the other way around. To stay competitive, banks are embracing mobile technology and incorporating social media into their marketing strategies. Banks and their competitors are grappling with the implications and opportunities created by mobile phones and social media (FinCen, 2000).
A handful of institutions are beginning to implement customer-centric technology and operational platforms to support a coordinated channel strategy. Banks that deliver excellent service can win market share from their competitors. As a result, many banks have started adapting their distribution channels and shifting from frontal personal service to direct sales and marketing via phone, email or electronic transactions. The general understanding is that this creates value both for the organization and its clients (Jayawardhena & Foley, 2000).

Technological development of banking channels saw the introduction of the ATMs which were originally used to withdraw cash. However, the ATM has evolved to support a wide variety of services, including deposits and account details. Indeed, to counteract the impersonal impression of the so-called “hole in the wall”, the Spanish bank Banco Bilbao Vizcaya Argentaria (BBVA) has developed its “future ATM”, an innovative touch screen interface with customized shortcuts to reflect individual user requirements (Jayawardhena & Foley, 2000).

Secondly, there is Tele Banking which entails establishment of call centers. The first call center was launched in 1983 in the United States of America (USA) and it marked a shift by many organizations towards centralized customer service centers, often with an automatic reply service incorporating voice recognition systems. However, despite these efforts away from personal interaction, the majority of call center activities still involve human representatives, particularly when dealing with transactions (Nyangosi et al., 2009).

Thirdly, there is Online Banking which emerged in the 1990s but one which still showed low penetration by the end of the decade. Initially used to present an institute’s marketing platform, the websites are now enjoying a new lease of life as a door to the world of 24-hour online transactions. Some countries even prefer the instant access to online account information and transactions to that offered by traditional banking, as confirmed in a survey conducted at the end of 2009 by the American Bankers Association (ABA). Fourthly, is Mobile Banking which is relatively new but is already showing steady growth? Used in its early stages as a push/pull tool for information text messages, cell phone banking now
supports personal account access and is forecasted to become the new mobile payment method or “digital wallet” of the future (Turner, 2001).

A recent survey by the Central Bank of Kenya (CBK) indicates that there is steady increase in use of e-banking technologies such as ATM, mobile and Internet (online) banking, electronic funds transfer, direct bill payments and credit card (CBK, 2008). Indeed, ATM banking is one of the earliest and widely adopted retail e-banking services in Kenya (Nyangosi et al., 2009). However, according to an annual report by Central Bank of Kenya, its adoption and usage has been surpassed by mobile banking (M-banking) in the last few years (CBK, 2008). Currently, there are about 8 million users of M-banking services compared to 4 million people who hold accounts in conventional financial institutions in Kenya (CBK, 2008).

The tremendous increase in number of people adopting M-banking has been attributed to ease of use and high number of mobile phone users. Nonetheless, e-banking is posing new challenges and opportunities for the commercial banks and their customers hence there is urgent need to establish tangible solutions that could be adopted across the commercial banking industry to overcome the challenges while capitalizing on the emanating opportunity. Kenya Commercial Bank (KCB) Limited is the largest bank in Kenya by asset base. The history of KCB dates back to 1896 when its predecessor, the National Bank of India, opened a branch in Mombasa. In 1958, National Bank of India merged with Grindlays bank to form the National and Grindlays bank. In 1970, the government of Kenya acquired a 60% shareholding in the National and Grindlays Bank in an effort to bring banking services to majority of Kenyans thereby changing its name to Kenya Commercial Bank.

In 1971, KCB established the Kenya Commercial Finance Company Limited as a subsidiary company. This was followed by the acquisition of Savings and Loan (Kenya) Limited in 1972 as the second subsidiary of KCB to specialize in the provision of mortgage finance. Kenya Commercial Bank incorporated KCB (Tanzania) Ltd in 1997, KCB Sudan Ltd in
The vision of KCB is to be the preferred financial solutions provider in Africa with a global reach while its mission is to grow the existing business whilst building the platform to be the preferred financial solutions provider in Africa with a global reach. The values of KCB include putting the customer first, employees working together as a team and being professional in everything they do and a willingness to change and care for the community. In summary therefore, the strategic intent of KCB Limited is to deliver value to customers, employees and the community in a manner that will spur its market growth in Africa and enable it attain a global reach.

1.2 Statement of the Problem

The traditional banking business model is based on physical decentralization, with branches scattered around populated areas, providing a range of services. In the past, a large branch network was source of competitive advantage, as it gave customers easier geographic access and the reassurance that the bank has substantial resources and hence offers security for their savings. However, with the arrival of the electronic banking channels the number of branches is steadily declining and could no longer be relied upon to present a competitive advantage to the commercial banks (Jayawardhena & Foley, 2000).

E-banking has offered many new business opportunities. The fast advancing global information infrastructure (including information technology and computer networks such as the Internet and telecommunications systems) has enabled the development of many electronic banking channels including Automated Teller Machines, Tele Banking, Online Banking and Mobile Banking. All these developments have seen commercial banks attain both local and global expansion and facilitated delivery of superior products and services that have enhanced their competitive advantage. Indeed, most banks choose to deliver their products and services through the multiple e-banking channels, including the internet and telephone. Therefore, the traditional structure of banking industry is changing as the
telephone and internet based banking model offers a potential alternative (Jayawardhena & Foley, 2000).

World over, banks are reorienting their business strategies towards new opportunities offered by e-banking. E-banking has enabled banks to scale borders, change strategic behavior and thus bring about new possibilities. E-banking has moved real banking behavior closer to neoclassical economic theories of market functioning. Due to the absolute transparency of the market, clients (both business as well as retail) can compare the services of various banks more easily. For instance, on the internet, competitors are only one click away. If clients are not happy with the products, prices or services offered by a particular bank, they are able to change their banking partner much more easily than in the physical or real bank-client relationship. From the banks’ point of view, use of the telephone and internet has significantly reduced the physical costs of banking operations (Turner, 2001).

The main idea of the e-banking model is the reduction in operational costs of traditional branch networks and telephone call centers. There is a potential competitive advantage to Internet only banks, as lower operational costs could mean they are able to offer higher value to customers. So far, however, this has not been the case, and the main beneficiaries of e-banking have been traditional banks, offering e-banking as just another service delivery channel. Moreover, it is noted that while the Kenyan commercial banks correctly estimated the majority of challenges posed by the adoption of e-banking; they did not anticipate the associated difficulties of acquiring skilled staff to design, implement and manage the IT aspects of the transition (Nyangosi et al., 2009). As a result, the commercial banks are lacking in policy to address the emanating challenges resulting from investments in e-banking models. This creates a knowledge gap and therefore, this study seeks to conduct a detailed assessment of e-banking channels as a strategy for gaining competitive advantage in the Kenyan commercial banking sector with a view to identify opportunities and recommend appropriate solutions to the inherent challenges.
1.3 General Objective
The general objective of the study was to assess electronic banking channels as a strategy for gaining competitive advantage in banking services at KCB.

1.4 Specific Objectives
1.4.1 To establish the key factors of e-banking as a competitive advantage tool at KCB.
1.4.2 To determine the relationship between e-banking application and competitive advantage of KCB.
1.4.3 To establish whether customer preferences influence electronic channels of banks at KCB.
1.4.4 To establish e-banking challenges experienced by KCB.

1.5 Importance of the Study
The specific benefits that will accrue from this study and be of benefit to various stakeholders would include the following:

1.5.1 The KCB Management
The findings of this study have focused on KCB as an organization and the results may assist the management of KCB in maximizing on the generation of e-banking revenue and differentiating the bank’s services and products from their competitors. The management may use the study’s recommendations to improve on their e-banking strategies.

1.5.2 KCB Employees
This study may assist KCB employees to develop a deeper understanding of the issues involved in e-banking and how these influences the organization’s achievement of its overall strategic objectives. Employees in other financial institutions also have a knowledge base of understanding the importance of e-banking as a competitive tool.
1.5.3 Other Researchers
This study has added to the existing knowledge on the success factors and challenges of e-banking models at KCB. It also contributes new knowledge in terms of the policies to address the emerging challenges and strategies to tap the emerging opportunities. Other researchers may benefit from this study by borrowing ideas on models for adoption in the financial services processing centers to achieve efficiencies, cost savings and enhanced controls.

1.6 Scope of Study
The study was undertaken at KCB Bank Group. It targeted the Strategy and Innovation Division of the bank as well as the Channel and Expansion team under the Retail Division. The researcher ensured that market sensitive information was not disclosed and feedback obtained was tailored in such a manner that the organization’s advantage was not compromised. Due to the fact that the organization works on tight schedules, receipt of responses in a timely manner from all targeted respondents was cumbersome. To overcome this challenge, the researcher used structured questionnaires to collect data. Though it would have been more effective to study three or more local organizations which had embraced e-banking models, the detailed assessment of KCB Bank Group was expected to bring forth findings that would reflect the prevailing situation for all commercial banks that had embraced the e-banking concept for the period ranging from 2015 to 2017. Data was collected between the months of April and May 2017.

1.7 Definition of Terms
1.7.1 Online Banking
Banking services offered over the internet. Online banking often includes access to ones checking and savings accounts, the ability to view balances and so forth (Rust, 2002).

1.7.2 E-Banking
A form of banking in which funds are transferred electronically between financial institutions instead of cash, checks, or other negotiable instruments being physically exchanged. The
ownership of funds and transfers of funds between financial institutions are recorded on computer systems connected by telephone lines. Customers of the financial institutions can access their records using a password or Personal Identification Number (PIN) (Singh, 2001).

1.7.3 Competitive Advantage
This is defined as a superiority gained by an organization when it can provide the same value as its competitors but at a lower price, or can charge higher prices by providing greater value through differentiation (Barwise & Farley, 2005).

1.7.4 Services
A service is a transaction in which no physical goods are transferred from the seller to the buyer (Sham et al., 2016). Intangible products such as accounting, banking, cleaning, consultancy, education, insurance, expertise, medical treatment, or transportation (Barwise & Farley, 2005).

1.7.5 Banking Channels
The term banking channel refers to the various modes/ways in which we can do banking or the banks can render their services (Sham et al., 2016). Channels are the vehicles through which customers can interact with a bank. These channels may be used for either sales or service interactions (Rust, 2002).

1.7.6 Customer Preferences
Consumer preferences is defined as the subjective (individual) taste, as measured by utility, of various bundles of goods (Rust, 2002).

1.8 Chapter Summary
The chapter documents the path the commercial banks have followed from traditional brick and mortar branches to the current virtual branches through the use of Information Communication Technology (ICT) innovations including Automated Teller Machines, telebanking, online banking and electronic banking. It enumerates the key success factors in
the implementation of e-banking and also detects the lack of policies and crucial knowledge on the emerging challenges facing the implementation of e-banking models. The importance of the study to the KCB management, employees and academia has also been enumerated to include policy making guides, attainment of strategic objectives and reference material respectively. The scope of the study is limited between 2000 and 2012 and targets KCB Bank Group in Kenya. The chapter closes by providing a definition of key terms.

The second chapter of the study focuses on the literature review of the study, the third chapter presents the research methodology used to carry out the study, the fourth chapter presents the study findings through figures and tables, and the fifth chapter concludes the study results by focusing on the summary of findings, discussions, conclusions, and recommendations.
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction.
This chapter will analyze comments from several authors related to the e-banking concept with a view of determining the relationship between e-banking, application and competitive advantage, highlighting the key factors and challenges of banking as a competitive advantage tool, establish whether customer preferences influence electronic channels of banks and proposing solutions to tap opportunities and solve the identified challenges at KCB.

2.2 Factors of e-Banking as a Competitive Advantage Tool
Banking has always been a highly information intensive activity that relies heavily on IT to acquire, process, and deliver the information to all relevant users. Not only is IT critical in the processing of information, it provides a way for the banks to differentiate their products and services. Banks find that they have to constantly innovate and update to retain their demanding and discerning customers and to provide convenient, reliable, and expedient services.

Since the introduction of the Internet in 1969, it has evolved from the sole domain of the computer nerd and the academic to a mainstream channel of communication (Nehmzow 2007). Recently, it has been rapidly gaining popularity as a potential medium for electronic banking (Crede 2015; Ooi 2009; U.S. Department of Commerce 2009). The rapid growth of the Internet has presented a new host of opportunities as well as threats to business. Today, the Internet is well on its way to become a full-fledged delivery and distribution channel and among the consumer-oriented applications riding at the forefront of this evolution are electronic financial products and services (Nehmzow 20).

2.2.1 Convenience
Convenience is a state of being able to proceed with something with little effort or difficulty. Internet banking is convenient since it reduces physical effort of visiting counters and the time spent on banking services (Howcroft, Hamilton, and Hewer, 2012). Customers can
obtain into the internet anytime and anywhere and e-banking is not limited by geographic and time constraints.

In Katariina (2006) report explores that in international business context, convenience consist of saving time and enhancing service efficiency as compared to branch banking (Polatoglu and Ekin, 2011). Gerrad and Cunningham (2013) found convenience to have relative advantage of adopting the internet banking service channel. Besides that, international business rates convenience as people are prone to favor more leisure-time and to dedicating less time to financial matters (Devlin, 2015).

According to Divya and Padmananbhan (2008) 81% of total users agree or strongly agree that internet banking is convenient because e-banking brings benefits such as no queuing in bank and one can do anywhere and anytime banking. Internet banking is convenient, no geographical barriers, low cost and is not bound by operational timings (IAMAI, 2006). E-banking brings customers convenience and flexibility and can be offered at a lower cost than traditional branch banking (Williamson, 2006). The convenience of e-banking is contributing to varying models in cash withdrawal and daily money management and assisting public achieve greater control of their finances (Devlin, 2015).

E-Banking provides higher degree of convenience that enables customers to access internet bank at all times and places. Apart from that, the ease of access of computers is perceived as a measure of relative advantage (Tunner, 2009) reveals that there are some service quality determinants that are predominantly satisfiers and others that are predominantly dissatisfiers with the main sources of satisfaction being attentiveness, responsiveness, care and friendliness. The main sources of dissatisfaction are integrity, reliability, responsiveness, availability and functionality. The provision of customer interactivity is an important criterion that attracts users in the delivery of e-banking (White and Nteli, 2014). Gerrard and Cunningham (2010) also identify other factors of paramount importance in ensuring the success of e-banking, i.e. the ability of an innovation to meet users' needs using different feature availability on the web site. For instance, the provision of interactive loan calculators,
exchange rate converters, and mortgage calculators on the web sites draw the attention of both users and non-users into the bank's web site. A United Kingdom (UK) study uncovered five key service quality attributes, such as security related issues, convenience, speed and timeliness of the service, and product variety/diverse features (White and Nteli, 2014). Therefore, it is hypothesized that convenience has positive effect on customer satisfaction.

2.2.2 Privacy

In term of Internet banking, privacy can be defined as the claim of individuals, groups, or institutions to determine when, and to what extent, information about them is communicated to others (Agronoff, 2011). Based on Sonja and Faullant (2008) consumers really understand the meaning and functionality of the security features. Therefore bank should play their roles in order to influence their customer’s perception of online security.

Customers have doubts about the trust ability of the e-bank's privacy policies (Gerrard and Cunningham, 2013). Trust has striking influence on user's willingness to engage in online exchanges of money and personal sensitive information (Friedman et al., 2010; Wang et al., 2013). Privacy is an important dimension that may affect users' intention to adopt e-based transaction systems (Friedman et al., 2010). Gerrard and Cunningham (2013) states that, encryption technology is the most common feature at all bank sites to secure information privacy, supplemented by a combination of different unique identifiers, for instance, a password, mother's maiden name, a memorable date, or a few minutes of inactivity automatically logs users off the account. Besides, the Secure Socket Layer (SSL), a widely-used protocol use for online credit card payment, is designed to provide a private and reliable channel between two communicating entities; the use of Java Applet that runs within the user's browser; the use of a Personal Identification Number, as well as an integrated digital signature and digital certificate associated with a smart card system (Hutchinson and Warren, 2013). Thus, a combination of smart card and biometric recognition using fingerprints offers a more secure and easier access control for computers than the password method.
2.2.3 Security
Security can be defined as a form of protection to ensure the customers’ safety and to prevent hackers from invading the customers’ privacy (Dixit and Datta, 2010). According to Ahmad and Al-Zu’ bi (2011), security had a significant influence on customer satisfaction.

Assurance about security relates to the extent to which the web site guarantees the safety of customers’ financial and personal information, an area which has witnessed a proliferation of research interest. Security can be assured by providing a privacy statement and information about the security of the shopping mechanisms and by displaying the logos of trusted third parties (Dixit and Datta, 2010). For example, displaying trusted third party logo guarantees a certain level of security protection and has been shown to significantly influence how consumers regard the trustworthiness of e vendors.

Internet banking was made possible by the creation of Web browsers. In this mode of online banking, consumers do not have to purchase additional software (all they need is the browser), store any data on their computer, backup any data, or wait for software upgrades or new versions (Kolsaker and Payne, 2012; Dong-Her et al., 2004). All transactions occur on a secure server of a bank via the internet. The bank has all of the required data and software to execute the transactions. Customers go the bank's Web site, log in, and then take advantage of the bank's internet services. Typical bank services are account access and review, transfers of funds between accounts, bill payment, and then a widening variety of new services and products. Security plays an important role in internet banking and so there are several protocols for internet security of encrypted data packets (Kolsaker and Payne, 2012; Dong-Her et al., 2004). Customers are not aware of the encryption, however, only certain versions of popular internet browsers are acceptable to some banks due to their security limitations.

2.2.4 Ease of Use
This is defined as how natural it can be to operate something. Changes in technology do affect the routine activities of professionals, managers, everyone in the organization (Gallivan, 2014) as well as others in the society. As mentioned by Davis (2009), there are
two independent variables that contribute to the consumer acceptance towards the e-banking service; which is perceived as ease of use and perceived usefulness. These variables will affect consumer behavior and intention to use the service. The ease of use and accessibility has positive impact towards Internet banking services (Poon, 2008). Ease of use is the competitive factor that contributed to the acceptance of the Internet banking services among customers and as well as with other factors such as security, privacy and convenience (Pikkarainen et al., 2004; Wang et al., 2010).

According to Verkatesh (2010), the perception of use is an important determinant of user’s intention to use something that related to the Internet applications. Based on Eriksson et al. (2005) “ease of use” is one of the main determinants of factor that contribute to the popularity of Internet banking usage. It may correlate with the efforts required to learn to use Internet banking can affect the customers’ interest in new service provided by Internet banking. Upon reviewing ease of use as one of the determinants variable one should not neglect its relationship with technology anxiety. There were still people in the society that describe when anything related to internet it will further reflect the development of “technophobia” or “cyberphobia” (Rosen and Weil, 2015).

2.3 e-Banking Application and Competitive Advantage

Communication technology has grown in its significance in organizations. It enables access to multiple communication channels through leveraging the internet. This has led to the expansion of the term IT to ICT. ICT combines telecommunications, computing and broadcasting and covers any product that will store, retrieve, manipulate, transmit or receive information electronically, including telephones, faxes, computers and televisions, (CCK, 2012). The list of products has increased since the last publication to include any smart devices; watches, cameras, etc. that can be used to transmit data.

A company’s technical direction and framework for its technology based developments service is determined by its ICT strategy (Rosen and Weil, 2015). It plays a part in supporting the strategic objectives of an organization involving development of new and
improved products and service capabilities aimed at attaining a competitive edge over the competitive forces in its industry (Verkatesh, 2010). Large investments in complex ICT systems that increase a firm’s efficiency can lead to a firm creating entry barriers in the market. ICT can be used to reduce the cost of doing business by reducing transaction costs to both suppliers and customers (McKeen and Smith, 2012). It could play a role in the improvement of a firm’s products and services by the creation of new unique features enhancing the firm products and services differentiation. ICT creates opportunities that provide direct advantage to banks through the applications and services it can offer, by employing capabilities in ways that competing firms find difficult to match, or by creating new markets and market opportunities.

Internet banking by its nature offers more convenience and flexibility to customers coupled with a virtually absolute control over their banking. Service delivery is informational (informing customers on bank’s products) and transactional (conducting retail banking services). As an alternative delivery conduit for retail banking, it has all the impact on productivity imputed to Telebanking and personal computer (PC)-Banking. Aside that it is the most cost efficient technological means of yielding higher productivity. Furthermore, it eliminates the barriers of distance / time and provides continual productivity for the bank to unimaginable distant customers since it is accessible on a 24 hour basis.

ICT is fast becoming a dynamic channel that drives the Kenyan economy. ICT is becoming increasingly important for the growth of our economy as a whole. The availability and usage of adequate ICT skills are important factors, which influence the competitiveness among commercial banks in this era of e-Economy. Availability of skilled labor is a questionable resource requirement. There is a qualitative and quantitative imbalance in the supply of skilled labor and computer literacy amongst customers. It depends on the demographic factors, business cycles and rapid technological advancements taking place around us. Due to the vast development in the area of e-Banking it is essential that the policy makers should focus on the growing demand in ICT skills and take corrective steps to prepare the required numbers and quality beforehand (Rosen and Weil, 2015). E-Banking enables to conduct
banking business electronically over the Internet where the costs are minimal and it is no longer bound by time or geographical boundary. The target customers should as well equally be knowledgeable on the essential skills of applying Information Technology for the success of e-banking (Malden and Jayasena, 2009).

2.3.1 Competitive Strategies
The process of collecting, storing and analyzing data or information about a banks’ competitive arena is conducting its competitive intelligence investigation. It results in the actionable output of intelligence ascertained by the needs prescribed by the bank. Its function is the early identification of risks and opportunities in the market before they become obvious, according to (Comai and Joaquin, 2007). The primary basis for all above average performance of organizations is their sustenance of competitive advantage. Banks can have multiple weaknesses and strengths compared to their competitors. Cost leadership, the first strategy focuses on the firm setting out to be the low cost producer in its industry (McKeen and Smith, 2012). The cost advantage sources will vary depending on the industry structure. Some of these include possession of proprietary technology or knowledge, pursuit of economies of scale, preferential access to raw materials etc. An organization aiming to apply the low cost producer strategy strives to exploit all sources of cost advantage.

Banks have introduced alternative methods to offer their services including online banking, ATMs with varied features and functions, agents, internet banking etc. reducing their need to expand their branch network which is a costly endeavor. This has enabled access to services on a 24/7 scale with minimal human resource involved further reducing on production costs. Banks pursuing this strategy emphasize on the employment of highly experienced staff, development and refining of existing products and investment in organizational learning. Differentiation is the second differentiation strategy where, a firm seeks to be unique in its industry. Selecting one or more attributes that many customers perceive as important and positioning them meet those needs. The firm’s reward for its uniqueness is the premium price it can charge for its unique products or services (Porter, 1985). It varied features and functions, agents, internet banking reducing their need to expand their branch network which
is a costly endeavor. This has enabled access to services on a 24/7 scale with minimal human resource involved further reducing on production costs (Gallivan, 2014). Banks pursuing this strategy emphasize on the employment of highly experienced staff, development and refining of existing products and investment in organizational learning. Differentiation is the second differentiation strategy where a firm seeks to be unique in its industry. Selecting one or more attributes that many customers perceive as important and positioning them meet those needs. The firm’s reward for its uniqueness is the premium price it can charge for its unique products or services (Porter, 1985).

2.3.2 Mobile Banking Transactions Volume
In recent years, banks, payment system providers, and mobile operators have begun experimenting with branchless banking models which reduce costs by taking small value transactions out of banking halls into local retail shops, where agents such as airtime vendors, gas stations, and shopkeepers, register new accounts, accept client deposits, process transfers, and issue withdrawals using a client’s mobile phone then communicate transaction information back to the telecommunication provider or bank. This enables clients to send and receive electronic money wherever they have cell coverage. They need to visit a retail agent only for transactions that involve depositing or withdrawing cash (Salzaman, Palen, and Harper, 2011). The study collected data on the frequency of mobile banking transactions undertaken by the selected commercial banks and investigated their effect financial performance on these banks.

2.3.3 Mobile Banking Products
The terms M-banking, M-payments, M-transfer and M-finance refer collectively to a set of applications that enable people to use their mobile telephones to manipulate their bank accounts, store value in an account linked to their handsets, transfer funds or even access credit or insurance products. These have enhanced accessibility to financial service in both developed and developing world.
The first target for these applications was consumers in the developed world. By complementing services offered by the banking system, such as cheque books, ATMs, Voice mail/landline interfaces, smart cards, point of sale networks and internet resources, the mobile platform offers a convenient additional method for managing money without handling cash (Karjaluoto, 2012).

The M-Pesa has forced money transfer companies to lower prices, M-Pesa has also induced these firms and other financial firms to improve their products and services. In some cases, firms have partnered with M-Pesa to offer an integrated service (Njiraini and Anyanzwa, 2008). The study considered data on existence various mobile banking products and their improvement and availability has influenced the financial performance of the sampled commercial banks.

2.4 Customer Preference of the e-Banking Products from Commercial Banks

Electronic banking systems provided easy access to banking services. The interaction between user and bank has been substantially improved by deploying ATMs, Internet banking, and more recently, mobile banking (Claessens et al., 2012). E-banking reduces the transaction costs of banking for both Small and Medium Enterprises (SMEs) and banks. SMEs need not visit banks for banking transactions, providing round the clock services (Cheng, 2012). Customers prefers E-banking for conveniences, speed, round the clock services and access to the account from any parts of the world (Cheng, 2012).

E-banking offers benefits to banks as well. Banks can benefit from lower transaction costs as E-banking requires less paper work, less staffs and physical branches (Cheng, 2012). E-banking leads to higher level of customers” satisfaction and retention (Poatoglu and Ekin, 2011). E-banking reduces loan processing time as borrowers loan application can be viewed by loan processing and loan approval authority simultaneously (Smith and Rupp, 2013). Typically, loan applications received at branch level and send to head office for approval. This documents transfer to and from branch to head office consume much time and delay loan sanction period (Riyadh et al., 2009). Over the past years, two types of electronic
banking services have emerged in the banking sector; they are internet and phone banking (Adriana, 2012).

2.4.1 Internet Banking

Internet banking is a new age banking concept. It uses technology and brings the bank closer to the customer. Internet banking refers to systems that enable bank customers to get access to their accounts and general information on bank products and services through the use of bank’s website, without the intervention or inconvenience of sending letters, faxes, original signatures and telephone confirmations (Thulani et al., 2009). For those that have access to the internet and a computer all you need to do is proceed to your banks website and login. From there you have access to all of your accounts that you have at that bank. Transfer funds between your accounts with ease. You can also use online banking to see how much money you have in your accounts and where the money you have spent has gone.

Broadly, the levels of banking services offered through internet can be categorized into three types: The Basic Level Service is the banks” websites which disseminate information on different products and services offered to customers and members of public in general. It may receive and reply to customers” queries through e-mail; Simple Transactional Websites which allows customers to submit their instructions, applications for different services, queries on their account balances, but do not permit any fund-based transactions on their accounts; and Fully Transactional Websites which allows the customers to operate on their accounts for transfer of funds, payment of different bills, subscribing to other products of the bank and to transact purchase and sale of securities (Adriana, 2012).

2.4.2 Telephone Banking (Telebanking)

Telebanking (telephone banking) can be considered as a form of remote or virtual banking, which is essentially the delivery of branch financial services via telecommunication devices where the bank customers can perform retail banking transactions by dialing a touch-tone telephone or mobile communication unit, which is connected to an automated system of the bank by utilizing Automated Voice Response (AVR) technology” (Balachandher et al., 2009).
2011). It allows consumers to phone their financial institutions with instructions to pay certain bills or to transfer funds between accounts (FTC, 2012).

Customers prefer this mode of transaction since it is convenient. You can pay your bills any time and you do not have to go to the utility company during business hours to pay your bills. It saves time. One eliminates the time spent in lines at the utility companies waiting to pay the bills and withdrawing cash from the bank. More so, it is safer. One does not have to be walking around with cash to pay his or her utility bills. With all this benefits customers will prefer to use this type of e-banking service.

### 2.4.3 Automated Teller Machines

ATM is also called 24-hour tellers are electronic terminals which give consumers the opportunity to bank at almost any time (FTC, 2012). ATM banking is one of the earliest and widely adopted retail E-banking services in Kenya (Nyangosi et al., 2009). It is described as a combination of a computer terminal, record-keeping system and cash vault in one unit, permitting customers to enter the bank’s book keeping system with a plastic card containing a PIN or by punching a special code number into the computer terminal linked to the bank’s computerized records 24 hours a day (Rose, 2009). To withdraw cash, make deposits or transfer funds between accounts, a consumer needs an ATM card and a personal identification number. Once the customer login, access to transactions are displayed on the screen. It offers several retail banking services to customers. They are mostly located outside of banks, and are also found at airports, malls, and places far away from the home bank of customers. They were introduced first to function as cash dispensing machines (Abor, 2014). Some ATMs charge a usage fee for this service, with a higher fee for consumers who do not have an account at their institution. If a fee is charged, it must be revealed on the terminal screen or on a sign next to the screen Rose (2009).

ATM services have a lot of advantages. They include increase in productivity during banking hours if the service is available in addition to the human tellers. They are cost-effective way of achieving higher productivity per period of time (Abor, 2014). According to Rose (2009),
an ATM transaction is an average of about 6,400 per month compared to 4,300 for human
 Tellers. Furthermore, it saves customers time in service delivery as alternative to queuing in
 bank halls, customers can invest such time saved into other productive activities (Abor,
 2014). In addition, ATMs continue to serve customers whiles human tellers in the banking
 hall have stopped work, thereby increasing productivity for the banks (Rose, 2009).

2.4.4 Personal Computer Banking Services
PC-Banking is a service which allows the bank’s customers to access information about their
 accounts via a proprietary network, usually with the help of proprietary software installed on
 their personal computer. Once access is gained, the customer can perform a lot of retail
 banking functions (Rose, 2009).

The increasing awareness of the importance of computer literacy has resulted in increasing
 the use of personal computers. This certainly supports the growth of PC banking which
 virtually establishes a branch in the customers’ home or office, and offers 24-hour service,
 seven days a week. It also has the benefits of Telephone Banking and ATMs (Abor, 2014). It
 offers consumers the convenience of conducting many banking transactions electronically
 using a personal computer. Consumers can view their account balances, request transfers
 between accounts and pay bills electronically from home (Rose, 2009).

2.4.5 Electronic Funds Transfer at Point-of-Sale (EFTPoS)
An Electronic Funds Transfer at the Point of Sale is an on-line system that allows customers
 to transfer funds instantaneously from their bank accounts to merchant accounts when
 making purchases (at purchase points). A POS uses a debit card to activate an Electronic
 Fund Transfer Process (Chorafas, 2008). Point-of-Sale Transfer Terminals allow consumers
 to pay for retail purchase with a check card, a new name for debit card. This card looks like a
 credit card but with a significant difference, the money for the purchase is transferred
 immediately from your account to the store’s account.
Increased banking productivity results from the use of EFTPoS to service customers shopping payment requirements instead of clerical duties in handling cheques and cash withdrawals for shopping. Furthermore, the system continues after banking hours, hence continual productivity for the bank even after banking hours. It also saves customers time and energy in getting to bank branches or ATMs for cash withdrawals which can be harnessed into other productive activities (Abor, 2014). Some banks issued international cards (such as Visa, MasterCard) to their customers. Such cards can be used wherever accepted, and payment on the cards can only be done through an ordinary domiciliary account of the cardholder, or any other account that may be permitted. Some of these cards are credit or debit cards.

### 2.4.6 Credit and Debit Cards

A credit card is a small plastic card issued to users as a system of payment. It allows its holder to buy goods and services based on the holder's promise to pay for these goods and services. The issuer of the card creates a revolving account and grants a line of credit to the consumer (or the user) from which the user can borrow money for payment to a merchant or as a cash advance to the user (Mavri and Ioannou, 2012). A credit card is different from a debit card in that it does not withdraw money from the users account after every transaction. The issuer lends money to the consumer to be paid to the merchant. Holders of a valid credit card have the authorization to purchase goods and services up to a predetermined amount, called a credit limit. The vendor receives essential credit card information from the cardholder, the bank issuing the card actually reimburses the vendor, and eventually the cardholder repays the bank through regular monthly payments. If the entire balance is not paid in full, the credit card issuer can legally charge interest fees on the unpaid portion.

A debit card (also known as a bank card or cheque card) is a plastic card that provides an alternative payment method to cash when making purchases. Functionally, it can be called an electronic cheque, as the funds are withdrawn directly from either the bank account or from the remaining balance on the card. In some cases, the cards are designed exclusively for use on the internet, and so there is no physical card (Mavri and Ioannou, 2012). In many
countries the use of debit cards has become so widespread that their volume of use has overtaken or entirely replaced the cheque and, in some instances, cash transactions. Like credit cards, debit cards are used widely for telephone and Internet purchases and, unlike credit cards, the funds are transferred immediately from the bearer's bank account instead of having the bearer pay back the money at a later date. Debit cards may also allow for instant withdrawal of cash, acting as the ATM card for withdrawing cash and as a check guarantee card (Mavri and Ioannou, 2012).

2.5 Challenges of e-Banking in Commercial Banks

The changing financial landscape brings with it new challenges for bank management, regulatory and supervisory authorities. The major ones stem from increased cross-border transactions resulting from drastically lower transaction costs and the greater ease of banking activities, and from the reliance on technology to provide banking services with the necessary security. Banks that provide their services from a remote location through the Internet to be licensed.

E-banking increases banks’ dependence on information technology, thereby increasing the technical complexity of many operational and security issues and furthering a trend towards more partnerships, alliances and outsourcing arrangements with third parties, many of whom are unregulated. This development has been leading to the creation of new business models involving banks and non-blank entities, such as Internet service providers, telecommunication companies and other technology firms (BCBS, 2011).

The Internet is ubiquitous and global by nature. It is an open network accessible from anywhere in the world by unknown parties, with routing of messages through unknown locations and via fast evolving wireless devices. Therefore, it significantly magnifies the importance of security controls, customer authentication techniques, data protection, audit trail procedures, and customer privacy standards (BCBS, 2011)
2.5.1 Security

According to Claessens *et al.* (2012), security is simply the protection of interests. People want to protect their own money and banks their own exposure. The role of government is to maintain the integrity of and confidence in the whole system. With electronic cash, just as with paper cash today, it will be the responsibility of government to protect against systemic risk. This is a serious role that cannot be left to the micro-economic interests of commercial banks.

The security of information may be one of the biggest concerns to the Internet users. For electronic banking users who most likely connect to the Internet via dial-up modem, is faced with a smaller risk of someone breaking into their computers (Verkatesh, 2010). Only organizations such as banks with dedicated Internet connections face the risk of someone from the Internet gaining unauthorized access to their computer or network. However, the electronic banking system users still face the security risks with unauthorized access into their banking accounts (Smith and Rupp, 2013). Moreover, the electronic banking system users also concern about non-repudiability which requires a reliable identification of both the sender and the receiver of on-line transactions. Non-secure electronic transaction can be altered to change the apparent sender. Therefore, it is extremely important to build in non-reputability which means that the identity of both the sender and the receiver can be attested to by a trusted third party who holds the identity certificates (Kaleem and Ahmed, 2008).

2.5.2 Personal Information and Reputation Challenge

Internet banks need to collect personal information in order to do business, but if they do not follow local information collection laws then there could be lawsuits and government penalties. According to the US Computer Emergency Readiness Team's online article "Banking Securely Online," every Internet bank that operates in the United States must comply with Electronic Code of Federal Regulations Part 313.9 that deals with commercial practices. Internet banks must provide a comprehensive explanation of their policies in accordance with this code to every customer. It deals with the collection of information and the consumer's right to opt out of certain parts of it (Dixit and Datta, 2010). This can make
doing business over the Internet challenging for banks, especially when personal information is needed to process loans and create accounts.

Breaches of security and disruptions to the system's availability can damage a bank's reputation. The more a bank relies on electronic delivery channels, the greater the potential for reputational risks (Kaleem and Ahmed, 2008). If one electronic bank encounters problems that cause customers to lose confidence in electronic delivery channels as a whole or to view bank failures as system wide supervisory deficiencies, these problems can potentially affect other providers of electronic banking services. In many countries where electronic banking is becoming the trend, bank supervisors have put in place internal guidance notes for examiners, and many have released risk-management guidelines for banks (Kaleem and Ahmed, 2008).

2.5.3 E-Banking Fraud

Convenience is the key reason of why millions of people are opting out of traditional banking for online banking. Banks also enjoy providing the option of online banking because they can save on operating costs. Most internet banking fraud occurs in a two-step process. Firstly, the offender must get their hands on the customer's account information, like their username and password. Secondly, the offender will use that information to move his victim's money to another account or withdraw it to make fraudulent purchases. For the first step, offenders often employ one of the many popular fraud schemes to obtain personal information (Kaleem and Ahmed, 2008).

These fraud schemes include, but are not limited to: Over the shoulder looking" scheme: involves the offender observing his potential victim making financial transactions and recording the personal information used in the transaction; and "Phishing" scheme: stems from the two words "password" and "fishing." This entails sending e-mail scams and mail supposedly from the consumer's bank as a way to obtain the consumer's personal information, social insurance number, and in this case their online banking username and password (Kaleem and Ahmed, 2008).
2.5.4 Operational Challenge
The reliance on new technology to provide services makes security and system availability
the central operational risk of electronic banking. Security threats can come from inside or
outside the system, so banking regulators and supervisors must ensure that banks have
appropriate practices in place to guarantee the confidentiality of data, as well as the integrity
of the system and the data. Banks' security practices should be regularly tested and reviewed
by outside experts to analyze network vulnerabilities and recovery preparedness (Dixit and
Datta, 2010).

According to Verkatesh (2010), capacity planning to address increasing transaction volumes
and new technological developments should take account of the budgetary impact of new
investments, the ability to attract staff with the necessary expertise, and potential dependence
on external service providers. Managing heightened operational risks needs to become an
integral part of banks' overall management of risk, and supervisors need to include
operational risks in their safety and soundness evaluations.

2.5.5 Legal and Regulatory Challenge
Electronic banking carries sensitive legal risks for banks. Banks can potentially expand the
geographical scope of their services faster through electronic banking than through
traditional banks. In some cases, however, they might not be fully versed in a jurisdiction's
local laws and regulations before they begin to offer services there, either with a license or
without a license if one is not required (Smith and Rupp, 2013). When a license is not
required, a virtual bank lacking contact with its host country supervisor may find it even
more difficult to stay abreast of regulatory changes. As a consequence, virtual banks could
unknowingly violate customer protection laws, including on data collection and privacy, and
regulations on soliciting (Kaleem and Ahmad, 2016). In doing so, they expose themselves to
losses through lawsuits or crimes that are not prosecuted because of jurisdictional disputes.

As the Internet allows services to be provided from anywhere in the world, there is a danger
that banks will try to avoid regulation and supervision. What can regulators do? They can
require even banks that provide their services from a remote location through the Internet to be licensed. Licensing would be particularly appropriate where supervision is weak and cooperation between a virtual bank and the home supervisor is not adequate. Licensing is the norm, for example, in the United States and most of the countries of the European Union. A virtual bank licensed outside these jurisdictions that wishes to offer electronic banking services and take deposits in these countries must first establish a licensed branch (Kaleem and Ahmed, 2008).

2.5.6 Solutions to e-Banking Challenges

Kaleem and Ahmad (2016) argued that in undertaken E-banking transactions, customers are always concerned about hackers and anti-social elements. Hacking enables the unethical hackers to penetrate the accounts of online bankers, and spend their money. Availability of confidential information which is just secured by a user name and password makes it vulnerable to such threats. Most of the banks try to make their sites secured by implementing latest network security software. Learn to keep your cards, documents and passwords safe, and monitor your accounts to safeguard yourself from bank fraud committed through identity theft. Most importantly, find out how to protect your personal information to avoid identity theft from happening to you (BSP, 2016).

E-bankers should install virus scanners and keep them and their systems up-to-date especially PC banking. They should avoid practices that easily lead to security hazards in particular they should not start up arbitrary executable attachments received via electronic e-mail. Users should check fingerprints of certificates against the fingerprints that are (should be) given by the bank on official paper documents (Claessens et al., 2012; BSP, 2016).

2.6 Chapter Summary

This chapter has focused on factors of e-banking as a competitive advantage tool by discussing in details issues of convenience, privacy, security, and ease of use. It has also elaborated on e-banking application and competitive advantage by focusing on competitive strategies, mobile banking transactions volume, and mobile banking products. The chapter has
discussed in detail how customer preference of the e-banking products from commercial banks by examining the use of internet banking, telephone banking (telebanking), ATMs, PC-banking services, electronic funds transfer at point-of-sale (EFTPoS), and credit and debit cards. The chapter also examines the challenges of e-banking in commercial banks by focusing on security, personal information and reputation challenge, e-banking fraud, operational challenge, legal and regulatory challenge, and discussing solutions to e-banking challenges. The next chapter focuses on the research methodology of the study.
CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction
This chapter presents the research strategy of the present study. Included in this chapter is information on population and sample of research participants, research design and sources of data. In addition, data collection instrument, procedure and data analysis technique have been presented.

3.2 Research Design
Devine and Heath (2009) defines a research design as a blueprint for conducting a study with maximum control over factors that may interfere with the validity of the findings. Weathington, Cunningham and Ittenger (2010) define a research design as the researcher’s overall guide for answering the research question or testing the research hypothesis. This study used the descriptive research design.

A descriptive study is one in which information is collected without changing the environment (nothing is manipulated). Descriptive studies are conducted to demonstrate associations or relationships between different variable (Wodak and Meyer, 2009). A descriptive study involves collecting data that test the validity of the hypotheses regarding the present status of the subjects of the study. Bryman, Becker and Sempik (2008) state that descriptive research design is used to describe systematically the facts and characteristics of a given population or area of interest, factually and accurately and for this study, a descriptive study was used to determine electronic banking channels (independent variable) as a strategy for gaining competitive advantage (dependent variable) in banking services with a focus on KCB.

3.3 Population and Sampling Design
3.3.1 Population
Target population can be defined as the part of the population a researcher is interested in researching (Given, 2008). Babie and Halley (2007) define target population as the entire
aggregation of respondents that meet the designated set of criteria within a study. According to Onwuegbuzie and Leech (2005) a population element is the subject such as a person an organization, customer database, or the amount of quantitative data on which the measurement is being taken. The population for this study was all the staff working at KCB Bank whose total number was 235, and were distributed as shown.

**Table 3.1 Population Distribution**

<table>
<thead>
<tr>
<th>Management Level</th>
<th>Distribution</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior managers</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>Line managers</td>
<td>36</td>
<td>100</td>
</tr>
<tr>
<td>Operational managers</td>
<td>53</td>
<td>100</td>
</tr>
<tr>
<td>Regular staff</td>
<td>121</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>235</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: Kenya Commercial Bank (2017)*

**3.3.2 Sampling Design**

Sampling involves a process of selecting a sub-section of a population that represents the entire population in order to obtain information regarding the phenomenon of interest (Noy, 2008). Fielding (2010) defines sampling as a method of selecting a portion of the population for conducting a study in order to represent the population adequately since it is impossible to take the entire population because of time, financial factors and errors which discourage the researcher and leads him/her to surrender the study. The design is divided using a sample frame, sampling technique and a sample size.

**3.3.2.1 Sample Frame**

A sampling frame is the source material or device from which a sample is drawn (Lohr, 2010). It can also refer to a list of all those elements within a population that can be sampled, and may include individuals, households or institutions (Singh, 2008). Sampling frame can therefore be defined as the actual set of units from which a sample has been drawn, in the
case of a stratified sampling; all units from the sampling frame do not have an equal chance to be drawn and to occur in the sample (Verschuren, 2003). For this study, the sampling frame came from the official list of employees working at KCB Bank in 2017, and was obtained from the organization’s human resource (HR) department.

3.3.2.2 Sampling Technique

This study used stratified sampling technique. A stratified sample is a probability sampling technique in which the researcher divides the entire target population into different subgroups, or strata, and then randomly selects the final subjects proportionally from the different strata (Lohr, 2010). Singh (2008) states that stratified sampling is a modification of random sampling in which one divides the population into two or more relevant and significant groups based on one or more attributes. This type of sampling is used when the researcher wants to highlight specific subgroups within the population (Vogt, Gardner and Haeffele, 2012).

Stratified sampling technique was used to select the respondents from among the list that was provided by the HR department in order to capture all levels of managers and staff who were the study’s strata. The strata was divided into four categories comprising of senior managers, line managers, operational managers, and regular staff. Since the study targeted the different departments within KCB, stratified sampling was the most convenient sampling technique for the study. This method was also simple and it easily applied to the population. The design was selected since it ensured that all departments and staff members from various levels were captured.

3.3.2.3 Sample Size

A sample is defined as a small proportion of an entire population; a selection from the population (Lohr, 2010). Sample size determination is the act of choosing the number of observations or replicates to include in a statistical sample (Singh, 2008). The sample size is an important feature of any empirical study in which the goal is to make inferences about a
population from a sample (Noy, 2008). A sample size allows the researcher to make generalizations about the population (Lohr, 2010).

Vogt, Gardner and Haeffele (2012) state that when carrying out a study, 50% of the population yields an adequate sample. This study selected 70% of the total population to be the representative for the study, therefore, the sample size of the study was 70% of the total number of the population which brought the sample size to 165 respondents.

Table 3.2 Sample Size Distribution

<table>
<thead>
<tr>
<th>Position in Organization</th>
<th>Distribution</th>
<th>Percentage</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior managers</td>
<td>25</td>
<td>70</td>
<td>17</td>
</tr>
<tr>
<td>Line managers</td>
<td>36</td>
<td>70</td>
<td>26</td>
</tr>
<tr>
<td>Operational managers</td>
<td>53</td>
<td>70</td>
<td>37</td>
</tr>
<tr>
<td>Regular staff</td>
<td>121</td>
<td>70</td>
<td>85</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>235</strong></td>
<td><strong>70</strong></td>
<td><strong>165</strong></td>
</tr>
</tbody>
</table>

3.4 Data Collection Methods

Data collection is a systemic way of gathering information, which is relevant to the research purpose or questions (Onwuegbuzie and Leech, 2005). Primary data was collected for the study using self-administered questionnaire. A questionnaire is a general term including all data collection techniques in which each person is asked to answer the same set of questions in a predetermined order (Verschuren, 2003). Fielding (2010) defines a structured questionnaire as a formal list of questions designed so as to get the facts. This study used closed-ended questions to gather data for the study. The questionnaire also employed the use of a five point likert scale. The likert measure allowed the study population to rate various questions using the scales that were provided.
The questionnaire was divided into 6 sections that were as follows: Part A focused on demographics, Part B focused on factors of e-banking as a competitive advantage tool, Part C focused on e-banking application and competitive advantage, Part D focused on customer preference of the e-banking products from commercial banks, Part E focused on challenges of e-banking in commercial banks, and Part F focused on the competitive advantages measures in electronic banking.

3.5 Research Procedures
Arksey and O’Malley (2005) state that it is imperative for a researcher to test the reliability of the data collection instrument for the study results to be reliable. The researcher developed the questionnaire based on the research objectives, and it was pilot tested by being administered randomly to a selected sample of 10 respondents from the target population. This was done in order to refine it, and test its reliability. A Cronbach Alpha test was carried out on the instruments to ensure that they were able to meet the study objectives. A threshold of >0.7 was used as the base for a valid instrument.

After the validity test, the researcher administered the questionnaires individually to the selected population target which was KCB. The researcher exercised care and control to ensure all questionnaires issued to the respondents were received. To achieve this, the researcher maintained a register of questionnaires that were handed out, and those that were collected from the respondents. The respondents were given a three day period to complete and fill the questionnaires to ensure that they did not rush in answering, and facilitating their ability to offer an accurate account. Data was collected between the months of April and May 2017. To ensure a high response rate, the researcher sought permission from the institution, and once it was granted, the researcher used the line managers to distribute the questionnaires so as to encourage participation.

3.6 Data Analysis Methods
Data analysis is the systematic organization and synthesis of the research data and the testing of research hypotheses, using those data (Creswell and Plano, 2010). Data analysis also
entails categorizing, ordering, manipulating and summarizing the data and describing them in meaningful terms (Pearson, 2010; Babie and Halley, 2007). The completed questionnaires were analyzed using the Statistical Package for Social Science (SPSS). The data collected was classified into meaningful categories (coded), edited and tabulation of the same was done.

The study used statistical frequencies and percentages for analysis. These was done to show the percentage of responses. For likert questions, the study employed the use of means and standard deviations to show the strength and the degree in response differences. Inferential analysis was conducted which entailed Pearson correlation coefficient used to examine the nature of relationships between study variables in terms of significant and insignificant factors. Multiple regression analysis was also be used to show the strength of existing relationships between the study variables, and data was presented using tables and figures.

3.7 Chapter Summary
This chapter has described the research design and the methodology which was used to study the electronic banking channels as a strategy for gaining competitive advantage in banking services with a focus on KCB. The research applied a survey approach that was facilitated by use of questionnaires. Data analysis was done using SPSS and presentation was by use of figures and tables. The next chapter presents the study results and findings.
CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction

This chapter presents the study findings. The analyzed data has been presented using figures and tables. The section has been divided as guided by the questionnaire. The chapter offers brief explanations of the numerical figures presented.

4.2 Response Rate and Reliability Test

4.2.1 Response Rate

The researcher gave out 165 questionnaires to the population and only 103 from the received were valid for analysis. This results gave the study a response rate of 62.4% which was above the required threshold.

![Study Response Rate](image)

Figure 4.1 Study Response Rate

4.2.2 Cronbach Reliability Test

A Cronbach Alpha test was carried out to test the reliability and validity of the questionnaire. The questionnaire variables that were tested included questions regarding: factors of e-banking, e-banking application, customer preference of the e-banking products, challenges of e-banking, and competitive advantage measures. The results were as shown in Table 4.1.
Table 4.1 Cronbach Reliability Test

<table>
<thead>
<tr>
<th>Variables</th>
<th>Number of Items</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factors of e-Banking</td>
<td>11</td>
<td>.716</td>
</tr>
<tr>
<td>E-Banking Application</td>
<td>10</td>
<td>.719</td>
</tr>
<tr>
<td>Customer Preference of the e-Banking</td>
<td>10</td>
<td>.631</td>
</tr>
<tr>
<td>Products</td>
<td>11</td>
<td>.767</td>
</tr>
<tr>
<td>Challenges of e-Banking</td>
<td>7</td>
<td>.772</td>
</tr>
<tr>
<td>Competitive Advantage Measures</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Cronbach coefficient indicates the questions contained within the instrument were viable and sufficient in answering the research questions, since their coefficients were >.07. Factors of e-banking had a coefficient of 0.716, E-Banking Application had a coefficient of 0.719, Customer Preference of the e-Banking Products had a coefficient of 0.631, Challenges of e-Banking had a coefficient of 0.767, and competitive Advantage Measures had a coefficient of 0.772.

4.3 Demographic Information

4.3.1 Gender

The respondents were asked to indicate their gender, and from the response collected, 60.2% were male and 39.8% were female. These results indicate that majority of employees at KCB were male compared to the female gender. This may be explained by the nature of the job in the banking sector which has more male gender as compared to females.

![Figure 4.2 Gender](image)
4.3.2 Age Bracket
The respondents were asked to indicate their age bracket, and from the response collected, 27.2% were equally aged between the ages of 36-45 years, and 25 years and below, 19.4% were equally aged between 46-55 years, and 26-35 years, and 6.8% were aged 56 years and above. These results show that majority of the respondents that worked at KCB were young adults and youths. This could be explained by the nature of the demographic available for employment.

![Figure 4.3 Age Bracket](image)

4.3.3 Level of Education
The respondents were asked to indicate their level of education, and from the response collected, 43.7% had degrees, 27.2% had Master’s degrees, 13.6% had PhDs, 12.6% had higher diplomas, and 2.9% had diplomas. These results show that the respondents were well educated and could easily understand the research questions.
4.3.4 Position in the Organization
The respondents were asked to indicate their position in the organization, and from the response collected, 38.8% were regular staff, 26.2% were operational managers, 21.4% were line managers, and 13.6% were senior managers. These results show that the respondents covered all areas of the organizations and was inclusive of all staff levels.
4.4 Factors of e-Banking as a Competitive Advantage Tool

4.4.1 Rating of Factors of e-Banking as a Competitive Advantage Tool

The respondents were asked to rate several key factors of e-banking as a competitive advantage tool using the scale: 1=Strongly Disagree, 2=Disagree 3=Moderately Agree, 4=Agree, and 5=Strongly Agree and their results were as shown in Table 4.2. The resulting standard deviation of <1.5 shows that the difference in response was almost similar.

Table 4.2 shows that e-banking has become a full-fledged delivery and distribution channel in the bank as a financial products/service as shown by all the respondents who agreed; the results had a mean of 4.65 and a standard deviation of 0.479. Internet banking is convenient and reduces bank queuing as well as reducing geographical barriers as shown by all the respondents who agreed; the results had a mean of 4.50 and a standard deviation of 0.502. E-banking contributes to varying models of cash withdrawals and cash management as shown by all the respondents who agreed; the results had a mean of 4.28 and a standard deviation of 0.648.

The provision of customer interactivity is an important criterion that attracts users in the delivery of e-banking as shown by all the respondents who agreed; the results had a mean of 4.40 and a standard deviation of 0.676. Our consumers understood the meaning and functionality of the security features of e-banking as shown by all the respondents who agreed; the results had a mean of 4.28 and a standard deviation of 0.648. Customers had doubts about the trust ability of e-banking privacy policies as shown by all the respondents who agreed; the results had a mean of 4.40 and a standard deviation of 0.676. Privacy is an important dimension that may affect users' intention to adopt e-banking transaction systems as shown by all the respondents who agreed; the results had a mean of 3.50 and a standard deviation of 0.502. Security can be assured by providing a privacy statement and information about the security of the shopping mechanisms as shown by all the respondents who agreed; the results had a mean of 4.40 and a standard deviation of 0.676.
Table 4.2 Rating of Factors of e-Banking as a Competitive Advantage Tool

<table>
<thead>
<tr>
<th>Factor</th>
<th>SD</th>
<th>D</th>
<th>MA</th>
<th>A</th>
<th>SA</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-banking has become a full-fledged delivery and distribution channel in the bank as a financial products/service</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>35</td>
<td>65</td>
<td>4.65</td>
<td>.479</td>
</tr>
<tr>
<td>Internet banking is convenient and reduces bank queuing as well as reducing geographical barriers</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>49.5</td>
<td>50.5</td>
<td>4.50</td>
<td>.502</td>
</tr>
<tr>
<td>E-banking contributes to varying models of cash withdrawals and cash management</td>
<td>0</td>
<td>0</td>
<td>10.7</td>
<td>50.5</td>
<td>38.8</td>
<td>4.28</td>
<td>.648</td>
</tr>
<tr>
<td>The provision of customer interactivity is an important criterion that attracts users in the delivery of e-banking</td>
<td>0</td>
<td>0</td>
<td>10.7</td>
<td>38.8</td>
<td>50.5</td>
<td>4.40</td>
<td>.676</td>
</tr>
<tr>
<td>Our consumers understand the meaning and functionality of the security features of e-banking</td>
<td>0</td>
<td>0</td>
<td>10.7</td>
<td>50.5</td>
<td>38.8</td>
<td>4.28</td>
<td>.648</td>
</tr>
<tr>
<td>Customers have doubts about the trust ability of e-banking privacy policies</td>
<td>0</td>
<td>0</td>
<td>10.7</td>
<td>38.8</td>
<td>50.5</td>
<td>4.40</td>
<td>.676</td>
</tr>
<tr>
<td>Privacy is an important dimension that may affect users' intention to adopt e-banking transaction systems</td>
<td>0</td>
<td>0</td>
<td>49.5</td>
<td>50.5</td>
<td>0</td>
<td>3.50</td>
<td>.502</td>
</tr>
<tr>
<td>Security can be assured by providing a privacy statement and information about the security of the shopping mechanisms</td>
<td>0</td>
<td>0</td>
<td>10.7</td>
<td>38.8</td>
<td>50.5</td>
<td>4.40</td>
<td>.676</td>
</tr>
<tr>
<td>Security plays an important role in internet banking and the several protocols for internet security of encrypted data packets</td>
<td>0</td>
<td>0</td>
<td>10.7</td>
<td>50.5</td>
<td>38.8</td>
<td>4.28</td>
<td>.648</td>
</tr>
<tr>
<td>Ease of use and accessibility has an impact towards adoption of Internet banking services</td>
<td>0</td>
<td>0</td>
<td>21.4</td>
<td>38.8</td>
<td>39.8</td>
<td>4.18</td>
<td>.764</td>
</tr>
<tr>
<td>Perception of use is an important determinant of user’s intention to use something that related to the Internet applications</td>
<td>0</td>
<td>0</td>
<td>10.7</td>
<td>39.8</td>
<td>49.5</td>
<td>4.39</td>
<td>.675</td>
</tr>
</tbody>
</table>

Table 4.2 also shows that, security plays an important role in internet banking and the several protocols for internet security of encrypted data packets as shown by all the respondents who agreed; the results had a mean of 4.28 and a standard deviation of 0.648. Ease of use and accessibility has an impact towards adoption of Internet banking services as shown by all the
respondents who agreed; the results had a mean of 4.18 and a standard deviation of 0.764. Perception of use is an important determinant of user’s intention to use something that related to the Internet applications as shown by all the respondents who agreed; the results had a mean of 4.39 and a standard deviation of 0.675.

4.4.2 Correlations for Factors of e-Banking as a Competitive Advantage Tool

A Pearson correlation test was carried out to determine the significant variables for e-banking factors as a competitive advantage tool. The researcher transformed e-banking factors to form 4 variables (convenience, privacy, security, and ease of use). A p value of <0.05 was used as the study’s threshold, and the results were as shown in Table 4.3.

Table 4.3 Correlations for Key Factors of e-Banking as a Competitive Advantage Tool

<table>
<thead>
<tr>
<th>Competitive Advantage</th>
<th>Convenience</th>
<th>Privacy</th>
<th>Security</th>
<th>Ease of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitive Advantage</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Convenience</td>
<td>-.223*</td>
<td>.024</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Privacy</td>
<td>-.782**</td>
<td>.632**</td>
<td>.000</td>
<td>1</td>
</tr>
<tr>
<td>Security</td>
<td>-.381**</td>
<td>.764**</td>
<td>.861**</td>
<td>.020</td>
</tr>
<tr>
<td>Ease of Use</td>
<td>.243*</td>
<td>.327**</td>
<td>.020</td>
<td>.210*</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

Table 4.3 shows that convenience was a significant factor to competitive advantage (r=-0.223, p<0.05). Privacy was a significant factor to competitive advantage (r=-0.782, p<0.05).
Security was a significant factor to competitive advantage \( (r=-0.381, p<0.05) \). Ease of use was a significant factor to competitive advantage \( (r=0.243, p<0.05) \).

### 4.4.3 Regression Analysis for Factors of e-Banking as a Competitive Advantage Tool

The researcher transformed e-banking factors to form 4 variables (convenience, privacy, security, and ease of use) that were used to carry out a regression analysis, and the results were as shown:

#### Table 4.4 Model Summary Factors of e-Banking as a Competitive Advantage Tool

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.972</td>
<td>.944</td>
<td>.942</td>
<td>.11137</td>
</tr>
</tbody>
</table>

a. Predictors (Constant): Convenience, Privacy, Security, and Ease of Use

Table 4.4 shows the results of the regression model summary for convenience, privacy, security, and ease of use (independent variables), and the dependent variable which was competitive advantage. The adjusted R square value for the model showed that 94.2% of the variance in competitive advantage could be explained by convenience, privacy, security, and ease of use.

#### Table 4.5 Regression Coefficients for e-Banking as a Competitive Advantage Tool

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>5.964</td>
<td>.224</td>
<td></td>
<td>26.669</td>
</tr>
<tr>
<td>Convenience</td>
<td>.077</td>
<td>.072</td>
<td>.041</td>
<td>1.063</td>
</tr>
<tr>
<td>Privacy</td>
<td>-1.718</td>
<td>.050</td>
<td>-1.724</td>
<td>-34.710</td>
</tr>
<tr>
<td>Security</td>
<td>1.053</td>
<td>.057</td>
<td>1.064</td>
<td>18.402</td>
</tr>
<tr>
<td>Ease of use</td>
<td>.039</td>
<td>.026</td>
<td>.040</td>
<td>1.515</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Competitive Advantage
The regression coefficients in Table 4.5 predicts the relationship between the variables (convenience, privacy, security, and ease of use) and competitive advantage. The regression coefficient indicates that privacy had a negative, but significant influence on competitive advantage since its precision level was <0.05. The regression coefficient indicates that security had a positive, significant influence on competitive advantage since its precision level was <0.05. The regression coefficient indicates that convenience and ease of use had positive, but insignificant influence on competitive advantage since their precision levels were >0.05.

4.5 e-Banking Application and Competitive Advantage

4.5.1 Rating of e-Banking Application and Competitive Advantage

The respondents were asked to rate e-banking applications and competitive advantage using the scale: 1=Strongly Disagree, 2=Disagree 3=Moderately Agree, 4=Agree, and 5=Strongly Agree and their results were as shown in Table 4.6. The resulting standard deviation of <1.5 shows that the response received was almost similar.

Table 4.6 shows that our company’s technical direction and framework for technology is based on development service that is determined by our ICT strategy as shown by all the respondents who agreed; the results had a mean of 3.40 and a standard deviation of 0.492. ICT is used to reduce the cost of doing business by reducing transaction costs to both suppliers and customers as shown by all the respondents who agreed; the results had a mean of 4.40 and a standard deviation of 0.492.

E-banking has ensured that our policy makers are focus on the growing demand in ICT skills and they take corrective steps to prepare the required numbers and quality beforehand as shown by all the respondents who agreed; the results had a mean of 4.39 and a standard deviation of 0.675. E-banking strategy focuses on KCB setting out to be the low cost producers in the financial industry as shown by all the respondents who agreed; the results had a mean of 4.29 and a standard deviation of 0.651.
Table 4.6 Rating of e-Banking Application and Competitive Advantage

<table>
<thead>
<tr>
<th>Description</th>
<th>SD</th>
<th>D</th>
<th>MA</th>
<th>A</th>
<th>SA</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our company’s technical direction and framework for technology is based on</td>
<td>0</td>
<td>0</td>
<td>10.7</td>
<td>39.8</td>
<td>49.5</td>
<td>4.39</td>
<td>.675</td>
</tr>
<tr>
<td>development service that is determined by our ICT strategy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICT strategy supports the strategic objectives of the organization</td>
<td>0</td>
<td>0</td>
<td>10.7</td>
<td>49.5</td>
<td>39.8</td>
<td>4.29</td>
<td>.651</td>
</tr>
<tr>
<td>involving development of new and improved products and service capabilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Our large investments in complex ICT systems have increased our firm’s</td>
<td>0</td>
<td>0</td>
<td>60.2</td>
<td>39.8</td>
<td>0</td>
<td>3.40</td>
<td>.492</td>
</tr>
<tr>
<td>efficiency in creating entry barriers in the market</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICT is used to reduce the cost of doing business by reducing transaction</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>60.2</td>
<td>39.8</td>
<td>4.40</td>
<td>.492</td>
</tr>
<tr>
<td>costs to both suppliers and customers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-banking has ensured that our policy makers are focus on the growing</td>
<td>0</td>
<td>0</td>
<td>10.7</td>
<td>39.8</td>
<td>49.5</td>
<td>4.39</td>
<td>.675</td>
</tr>
<tr>
<td>demand in ICT skills and they take corrective steps to prepare the</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>required numbers and quality beforehand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-banking strategy focuses on KCB setting out to be the low cost producers</td>
<td>0</td>
<td>0</td>
<td>10.7</td>
<td>49.5</td>
<td>39.8</td>
<td>4.29</td>
<td>.651</td>
</tr>
<tr>
<td>in the financial industry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The bank emphasizes on the employment of highly experienced staff in</td>
<td>0</td>
<td>0</td>
<td>19.4</td>
<td>59.2</td>
<td>21.4</td>
<td>4.02</td>
<td>.641</td>
</tr>
<tr>
<td>online banking, development and refining of existing products and</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>investment in organizational learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A firm seek to be unique in the industry through the selection of</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>49.5</td>
<td>50.5</td>
<td>4.50</td>
<td>.502</td>
</tr>
<tr>
<td>attributes that many customers perceive as important and</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>positioning them to meet those needs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We use premium pricing for our unique products in the market as a reward</td>
<td>0</td>
<td>0</td>
<td>50.5</td>
<td>0</td>
<td>49.5</td>
<td>3.99</td>
<td>1.005</td>
</tr>
<tr>
<td>for our uniqueness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-banking has enabled our customers to access our bank services on a 24/7</td>
<td>0</td>
<td>0</td>
<td>50.5</td>
<td>0</td>
<td>49.5</td>
<td>3.99</td>
<td>1.005</td>
</tr>
<tr>
<td>scale with minimal human resource involved</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

47
Table 4.6 also shows that, the bank emphasizes on the employment of highly experienced staff in online banking, development and refining of existing products and investment in organizational learning as shown by all the respondents who agreed; the results had a mean of 4.02 and a standard deviation of 0.641. The firm seeks to be unique in the industry through the selection of attributes that many customers perceive as important and positioning them to meet those needs as shown by all the respondents who agreed; the results had a mean of 4.50 and a standard deviation of 0.502. KCB uses premium pricing for our unique products in the market as a reward for our uniqueness as shown by all the respondents who agreed; the results had a mean of 3.99 and a standard deviation of 1.005. E-banking has enabled our customers to access our bank services on a 24/7 scale with minimal human resource involved as shown by all the respondents who agreed; the results had a mean of 3.99 and a standard deviation of 1.005.

4.5.2 Correlations for e-Banking Application and Competitive Advantage

A Pearson correlation test was carried out to determine the significant variables for e-banking application and competitive advantage. The researcher transformed e-banking applications to form 3 variables (competitive strategies, mobile banking transactions volume, and mobile banking products). A p value of <0.05 was used as the study’s threshold, and the results were as shown in Table 4.7.

Table 4.7 shows that competitive strategy was an insignificant factor to competitive advantage (r=-0.020, p>0.05). Mobile banking transaction volume was a significant factor to competitive advantage (r=-0.240, p<0.05). Mobile banking products was a significant factor to competitive advantage (r=0.969, p<0.05).
Table 4.7 Correlations for e-Banking Application and Competitive Advantage

<table>
<thead>
<tr>
<th></th>
<th>Competitive Advantage</th>
<th>Competitive Strategy</th>
<th>Mobile Banking Transaction Volume</th>
<th>Mobile Banking Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitive Advantage</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competitive Strategy</td>
<td>-.020</td>
<td>.840</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Mobile Banking</td>
<td>-.240*</td>
<td>.840**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Transaction Volume</td>
<td>.015</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobile Banking Products</td>
<td>.969**</td>
<td>-.066</td>
<td>-.272**</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>.000</td>
<td>.507</td>
<td>.005</td>
<td></td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

4.5.3 Regression Analysis for e-Banking Application and Competitive Advantage

The researcher transformed e-banking applications to form 3 variables (competitive strategies, mobile banking transactions volume, and mobile banking products) that were used to carry out a regression analysis, and the results were as shown:

Table 4.8 Model Summary of e-Banking Application and Competitive Advantage

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.970</td>
<td>.942</td>
<td>.940</td>
<td>.11281</td>
</tr>
</tbody>
</table>

a. Predictors (Constant): Competitive Strategies, Mobile Banking Transactions Volume, and Mobile Banking Products

Table 4.8 shows the results of the regression model summary for competitive strategies, mobile banking transactions volume, and mobile banking products (independent variables), and the dependent variable which was competitive advantage. The adjusted R square value
for the model showed that 94% of the variance in competitive advantage could be explained by competitive strategies, mobile banking transactions volume, and mobile banking products.

Table 4.9 Regression Coefficients for e-Banking as a Competitive Advantage Tool

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Constant)</td>
<td>.217</td>
<td>.258</td>
<td>.842</td>
<td>.402</td>
</tr>
<tr>
<td>Competitive Strategies</td>
<td>.102</td>
<td>.056</td>
<td>1.829</td>
<td>.070</td>
</tr>
<tr>
<td>Mobile Banking Transactions</td>
<td>-.087</td>
<td>.084</td>
<td>-1.037</td>
<td>.302</td>
</tr>
<tr>
<td>Volume</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobile Banking Products</td>
<td>.882</td>
<td>.024</td>
<td>36.266</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Competitive Advantage

The regression coefficients in Table 4.9 predicts the relationship between the variables (competitive strategies, mobile banking transactions volume, and mobile banking products) and competitive advantage. The regression coefficient indicates that competitive strategies had positive, but insignificant influence on competitive advantage since their precision levels were >0.05. The regression coefficient indicates that mobile banking transactions volume had a negative, and insignificant influence on competitive advantage since its precision level was >0.05. The regression coefficient indicates that mobile banking products had a positive, significant influence on competitive advantage since its precision level was <0.05.

4.6 Customer Preference of e-Banking Products from Commercial Banks

4.6.1 Rating of Customer Preference of e-Banking Products from Commercial Banks

The respondents were asked to rate customer preference of e-banking products from commercial banks using the scale: 1=Strongly Disagree, 2=Disagree 3=Moderately Agree, 4=Agree, and 5=Strongly Agree, and their results were as shown in Table 4.10. The resulting mean of >3.0 shows that all factors were significant except for the use of escape avoidance
that had a mean of 1.96, the standard deviation of <1.5 shows that the response received was almost similar.

Table 4.10 shows that electronic banking systems provided easy access to banking services as shown by all the respondents who agreed; the results had a mean of 5.00 and a standard deviation of 0.000. E-banking leads to higher level of customers’ satisfaction and retention as shown by all the respondents who agreed; the results had a mean of 4.60 and a standard deviation of 0.492. E-banking reduces loan processing time as borrowers loan application can be viewed by loan processing and loan approval authority simultaneously as shown by all the respondents who agreed; the results had a mean of 4.50 and a standard deviation of 0.502. Tele-banking (telephone banking) allows consumers to phone their financial institutions with instructions to pay certain bills or to transfer funds between accounts as shown by all the respondents who agreed; the results had a mean of 5.00 and a standard deviation of 0.000.

ATM services increases productivity during banking hours if the service is available in addition to the human tellers as shown by all the respondents who agreed; the results had a mean of 4.50 and a standard deviation of 0.502. ATMs are a cost-effective way of achieving higher productivity per period of time as shown by all the respondents who agreed; the results had a mean of 4.50 and a standard deviation of 0.502. Personal Computer Banking allows the customer to perform a lot of retail banking functions as shown by all the respondents who agreed; the results had a mean of 3.50 and a standard deviation of 0.502. Personal Computer Banking offers consumers the convenience of conducting many banking transactions electronically using a personal computer as shown by all the respondents who agreed; the results had a mean of 4.50 and a standard deviation of 0.502. Point-of-Sale Transfer Terminals allow consumers to pay for retail purchase with a check card, a new name for debit card as shown by all the respondents who agreed; the results had a mean of 4.01 and a standard deviation of 1.005. Debit cards allow customers to debit credit and access instant withdrawal of cash, at convenience stores for example supermarkets, and act as the ATM card for withdrawing cash and as a check guarantee card as shown by all the respondents who agreed; the results had a mean of 4.01 and a standard deviation of 1.005.
Table 4.10 Rating of Customer Preference of e-Banking Products by Commercial Banks

<table>
<thead>
<tr>
<th>Description</th>
<th>SD %</th>
<th>D %</th>
<th>MA %</th>
<th>A %</th>
<th>SA %</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic banking systems provided easy access to banking services</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>5.00</td>
<td>.000</td>
</tr>
<tr>
<td>E-banking leads to higher level of customers’ satisfaction and retention</td>
<td>0</td>
<td>0</td>
<td>39.8</td>
<td>60.2</td>
<td></td>
<td>4.60</td>
<td>.492</td>
</tr>
<tr>
<td>E-banking reduces loan processing time as borrowers loan application can be</td>
<td>0</td>
<td>0</td>
<td>49.5</td>
<td>50.5</td>
<td></td>
<td>4.50</td>
<td>.502</td>
</tr>
<tr>
<td>viewed by loan processing and loan approval authority simultaneously</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tele-banking (telephone banking) allows consumers to phone their financial</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>5.00</td>
<td>.000</td>
</tr>
<tr>
<td>institutions with instructions to pay certain bills or to transfer funds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>between accounts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATM services increases productivity during banking hours if the service is</td>
<td>0</td>
<td>0</td>
<td>49.5</td>
<td>50.5</td>
<td></td>
<td>4.50</td>
<td>.502</td>
</tr>
<tr>
<td>available in addition to the human tellers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATMs are a cost-effective way of achieving higher productivity per period</td>
<td>0</td>
<td>0</td>
<td>50.5</td>
<td>49.5</td>
<td></td>
<td>4.50</td>
<td>.502</td>
</tr>
<tr>
<td>of time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Computer Banking allows the customer to perform a lot of retail</td>
<td>0</td>
<td>0</td>
<td>49.5</td>
<td>50.5</td>
<td></td>
<td>3.50</td>
<td>.502</td>
</tr>
<tr>
<td>banking functions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Computer Banking offers consumers the convenience of conducting</td>
<td>0</td>
<td>0</td>
<td>50.5</td>
<td>49.5</td>
<td></td>
<td>4.50</td>
<td>.502</td>
</tr>
<tr>
<td>many banking transactions electronically using a personal computer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Point-of-Sale Transfer Terminals allow consumers to pay for retail purchase</td>
<td>0</td>
<td>0</td>
<td>49.5</td>
<td>0</td>
<td>50.5</td>
<td>4.01</td>
<td>1.005</td>
</tr>
<tr>
<td>with a check card, a new name for debit card</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debit cards allow customers to debit credit and access instant withdrawal</td>
<td>0</td>
<td>0</td>
<td>49.5</td>
<td>0</td>
<td>50.5</td>
<td>4.01</td>
<td>1.005</td>
</tr>
<tr>
<td>of cash, at convenience stores for example supermarkets, and act as the</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATMs for withdrawing cash and as a check guarantee card</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.6.2 Correlations for Customer Preference of e-Banking Products by Commercial Banks

A Pearson correlation test was carried out to determine the customer preference of e-banking products by commercial banks. The researcher transformed customer preference products to form 6 variables (internet banking, telebanking, ATMs, PC-Banking services, EFTPos, and credit and debit cards). A p value of <0.05 was used as the study’s threshold, and the results were as shown in Table 4.11.

Table 4.11 Correlations for Customer Preference of e-Banking Products

<table>
<thead>
<tr>
<th></th>
<th>Competitive advantage</th>
<th>Internet banking</th>
<th>Telebanking</th>
<th>ATMs</th>
<th>PC Banking services</th>
<th>EFTPos</th>
<th>Credit &amp; Debit Cards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitive Advantage</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet banking</td>
<td>-0.772**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telebanking</td>
<td>-0.969**</td>
<td>0.821**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATMs</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PC Banking services</td>
<td>0.601**</td>
<td>-0.342**</td>
<td>-0.639**</td>
<td>1</td>
<td>-</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EFTPos</td>
<td>-0.969**</td>
<td>0.821**</td>
<td>1.000**</td>
<td>-</td>
<td>-0.639**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credit and Debit cards</td>
<td>-0.969**</td>
<td>0.821**</td>
<td>1.000**</td>
<td>-</td>
<td>-0.639**</td>
<td>1.000**</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)
Table 4.11 shows that internet banking was a significant factor to competitive advantage ($r=-0.772$, $p<0.05$). Tele-banking transaction volume was a significant factor to competitive advantage ($r=-0.969$, $p<0.05$). PC-Banking services was a significant factor to competitive advantage ($r=0.601$, $p<0.05$). EFTPos was a significant factor to competitive advantage ($r=-0.601$, $p<0.05$). Credit and Debit cards are a significant factor to competitive advantage ($r=-0.969$, $p<0.05$). The ATMs variables was excluded since it contained a constant value.

4.6.3 Regression Analysis for Customer Preference of e-Banking Products

The researcher transformed customer preference of e-banking products to form 6 variables (internet banking, telebanking, ATMs, PC-Banking services, EFTPos, and credit and debit cards) that were used to carry out a regression analysis, and the results were as shown. The variables for ATMs, Telebanking, and EFTPos were excluded from the analysis due to the fact that it contained a constant value.

Table 4.12 Model Summary for Customer Preference of e-Banking Products

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.971</td>
<td>.943</td>
<td>.941</td>
<td>.11164</td>
</tr>
</tbody>
</table>

a. Predictors (Constant): Internet Banking, PC-Banking Services, Credit and Debit Cards

Table 4.12 shows the results of the regression model summary for debit cards, PC-Banking, and internet banking (independent variables), and the dependent variable which was competitive advantage. The adjusted R square value for the model showed that 94.1% of the variance in competitive advantage could be explained by debit cards, PC-Banking, and internet banking.

The regression coefficients in Table 4.13 predicts the relationship between the variables (debit cards, PC Banking, and internet banking) and competitive advantage. The regression coefficient indicates that Internet banking had a positive, significant influence on competitive advantage since its precision level was $<0.05$. The regression coefficient indicates that PC Banking services had a negative, and insignificant influence on competitive advantage since
its precision level was >0.05. The regression coefficient indicates that credit and debit cards had a negative, but significant influence on competitive advantage since its precision level was <0.05.

Table 4.13 Regression Coefficients for Customer Preference of e-Banking Products

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>5.322</td>
<td>.331</td>
<td></td>
<td>16.065</td>
</tr>
<tr>
<td>Internet Banking</td>
<td>.206</td>
<td>.087</td>
<td>.110</td>
<td>2.379</td>
</tr>
<tr>
<td>PC-Banking Services</td>
<td>-.091</td>
<td>.049</td>
<td>-.063</td>
<td>-1.850</td>
</tr>
<tr>
<td>Credit &amp; Debit Cards</td>
<td>-.504</td>
<td>.026</td>
<td>-1.100</td>
<td>-19.489</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Competitive Advantage

4.7. Challenges of e-Banking in Commercial Banks

4.7.1 Rating of Challenges of e-Banking in Commercial Banks

The respondents were asked to rate challenges of e-banking in commercial banks using the scale: 1=Strongly Disagree, 2=Disagree, 3=Moderately Agree, 4=Agree, 5=Strongly Agree, and their results were as shown in Table 4.14. The resulting mean of >3.0 shows that all factors were significant except for the use of escape avoidance that had a mean of 1.96, the standard deviation of <1.5 shows that the response received was almost similar.

Table 4.14 shows that Security of information is one of the biggest concerns of our customers that utilize e-banking as shown by all the respondents who agreed; the results had a mean of 4.40 and a standard deviation of 0.662. E-banking system users still face the security risks with unauthorized access into their banking accounts as shown by all the respondents who agreed; the results had a mean of 4.50 and a standard deviation of 0.502. E-banking system users are concerned about non-reputability which requires a reliable identification of both the sender and the receiver of online transactions as shown by all the respondents who agreed; the results had a mean of 4.50 and a standard deviation of 0.502.
Table 4.14 Rating of Challenges of e-Banking in Commercial Banks

<table>
<thead>
<tr>
<th>challenge</th>
<th>SD</th>
<th>D</th>
<th>MA</th>
<th>A</th>
<th>SA</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security of information is one of the biggest concerns of our customers that utilize e-banking</td>
<td>0</td>
<td>0</td>
<td>9.7</td>
<td>40.8</td>
<td>49.5</td>
<td>4.40</td>
<td>.662</td>
</tr>
<tr>
<td>E-banking system users still face the security risks with unauthorized access into their banking accounts</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>49.5</td>
<td>50.5</td>
<td>4.50</td>
<td>.502</td>
</tr>
<tr>
<td>E-banking system users are concerned about non-reputability which requires a reliable identification of both the sender and the receiver of online transactions</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>49.5</td>
<td>50.5</td>
<td>4.50</td>
<td>.502</td>
</tr>
<tr>
<td>As a bank, we must provide a comprehensive explanation of our policies to our e-banking customers</td>
<td>0</td>
<td>0</td>
<td>30.1</td>
<td>9.7</td>
<td>60.2</td>
<td>4.30</td>
<td>.906</td>
</tr>
<tr>
<td>Consumer's right to opt out of certain parts of giving us personal information makes doing business over the Internet challenging for us</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>49.5</td>
<td>50.5</td>
<td>4.50</td>
<td>.502</td>
</tr>
<tr>
<td>Breaches of security and disruptions to the system's availability can damage our reputation</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>39.8</td>
<td>60.2</td>
<td>4.60</td>
<td>.492</td>
</tr>
<tr>
<td>Our reliance on new technology to provide services makes security and system availability the central operational risk of e-banking</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>49.5</td>
<td>50.5</td>
<td>4.50</td>
<td>.502</td>
</tr>
<tr>
<td>Our security practices are regularly tested and reviewed by outside experts to analyze network vulnerabilities and recovery preparedness</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>39.8</td>
<td>60.2</td>
<td>4.60</td>
<td>.492</td>
</tr>
<tr>
<td>Our challenges is in the form of capacity planning that addresses the increasing transaction volumes and new technological developments that take place more often</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>49.5</td>
<td>50.5</td>
<td>4.50</td>
<td>.502</td>
</tr>
<tr>
<td>As a bank, we are not fully versed on the laws and regulations that exist on e-banking</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>50.5</td>
<td>49.5</td>
<td>4.50</td>
<td>.502</td>
</tr>
<tr>
<td>Our virtual banking could unknowingly be violating the customer protection laws, including on data collection and privacy, and regulations on soliciting</td>
<td>0</td>
<td>0</td>
<td>39.8</td>
<td>60.2</td>
<td>0</td>
<td>3.60</td>
<td>.492</td>
</tr>
</tbody>
</table>
Table 4.14 shows that, as a bank, we must provide a comprehensive explanation of our policies to our e-banking customers as shown by all the respondents who agreed; the results had a mean of 4.30 and a standard deviation of 0.906. Consumer's right to opt out of certain parts of giving us personal information makes doing business over the Internet challenging for us as shown by all the respondents who agreed; the results had a mean of 4.50 and a standard deviation of 0.502. Breaches of security and disruptions to the system's availability can damage our reputation as shown by all the respondents who agreed; the results had a mean of 4.60 and a standard deviation of 0.492. Our reliance on new technology to provide services makes security and system availability the central operational risk of e-banking as shown by all the respondents who agreed; the results had a mean of 4.50 and a standard deviation of 0.502. Our security practices are regularly tested and reviewed by outside experts to analyze network vulnerabilities and recovery preparedness as shown by all the respondents who agreed; the results had a mean of 4.60 and a standard deviation of 0.492.

KCB’s challenge is in the form of capacity planning that addresses the increasing transaction volumes and new technological developments that take place more often as shown by all the respondents who agreed; the results had a mean of 4.50 and a standard deviation of 0.502. As a bank, we are not fully versed on the laws and regulations that exist on e-banking as shown by all the respondents who agreed; the results had a mean of 4.50 and a standard deviation of 0.502. Our virtual banking could unknowingly be violating the customer protection laws, including on data collection and privacy, and regulations on soliciting as shown by all the respondents who agreed; the results had a mean of 3.60 and a standard deviation of 0.492.

4.7.2 Correlations for Challenges of e-Banking in Commercial Banks

A Pearson correlation test was carried out to determine significant factors for challenges of e-banking in commercial banks. The researcher transformed the e-banking challenges to form 6 variables (security, personal information & reputation, e-banking fraud, operational challenge, legal and regulatory, and e-banking solutions). A p value of <0.05 was used as the study’s threshold, and the results were as shown in Table 4.15.
Table 4.15 Correlations for Challenges of e-Banking in Commercial Banks

<table>
<thead>
<tr>
<th></th>
<th>Competitive Advantage</th>
<th>Security</th>
<th>Personal Info &amp; Reputation</th>
<th>e-Banking Fraud</th>
<th>Operational</th>
<th>Legal &amp; Regulatory</th>
<th>e-Banking Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitive Advantage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security</td>
<td>-0.747**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Info &amp; Reputation</td>
<td>-0.482**</td>
<td>0.859**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e-Banking Fraud</td>
<td>-0.626**</td>
<td>0.429**</td>
<td>0.035</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operational</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legal &amp; Regulatory</td>
<td>-0.913**</td>
<td>0.799**</td>
<td>0.597**</td>
<td>0.589**</td>
<td>-</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>e-Banking Solutions</td>
<td>-0.772**</td>
<td>0.781**</td>
<td>0.593**</td>
<td>0.549**</td>
<td>-</td>
<td>0.953**</td>
<td>1</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2-tailed)**
*Correlation is significant at the 0.05 level (2-tailed)*

Table 4.15 shows that security was a significant factor to competitive advantage ($r=-0.747$, $p<0.05$). Personal information and reputation was a significant factor to competitive advantage ($r=-0.482$, $p<0.05$). E-banking fraud was a significant factor to competitive advantage ($r=-0.626$, $p<0.05$). Legal and regulatory challenge was a significant factor to competitive advantage ($r=-0.913$, $p<0.05$). E-banking solutions are a significant factor to competitive advantage ($r=-0.772$, $p<0.05$). The operational challenge variable was excluded since it contained a constant value.
4.7.3 Regression Analysis for Challenges of e-Banking in Commercial Banks

The researcher transformed the e-banking challenges to form 6 variables (security, personal information & reputation, e-banking fraud, operational challenge, legal and regulatory, and e-banking solutions) that were used to carry out a regression analysis, and the results were as shown. The variable for operational challenge was excluded from the analysis due to the fact that it contained a constant value.

Table 4.16 Model Summary for Challenges of e-Banking in Commercial Banks

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.985</td>
<td>.970</td>
<td>.968</td>
<td>.08211</td>
</tr>
</tbody>
</table>

Predictors (Constant): Security, Personal Information and Reputation, E-Banking Fraud, Legal and Regulatory, and E-Banking Solutions

Table 4.16 shows the results of the regression model summary for security, personal information and reputation, e-banking fraud, legal and regulatory, and e-banking solutions (independent variables), and the dependent variable which was competitive advantage. The adjusted R square value for the model showed that 96.8% of the variance in competitive advantage could be explained by security, personal information and reputation, e-banking fraud, legal and regulatory, and e-banking solutions.

Table 4.17 Regression Coefficients for Challenges of e-Banking in Commercial Banks

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>8.765</td>
<td>.187</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security</td>
<td>-.456</td>
<td>.057</td>
<td>-.468</td>
<td>-8.028</td>
</tr>
<tr>
<td>Personal Information and Reputation</td>
<td>.294</td>
<td>.043</td>
<td>.344</td>
<td>6.913</td>
</tr>
<tr>
<td>E-Banking Fraud</td>
<td>.035</td>
<td>.050</td>
<td>.021</td>
<td>.709</td>
</tr>
<tr>
<td>Legal and Regulatory</td>
<td>-1.746</td>
<td>.062</td>
<td>-1.798</td>
<td>-28.358</td>
</tr>
<tr>
<td>E-Banking Solutions</td>
<td>1.023</td>
<td>.055</td>
<td>1.091</td>
<td>18.578</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Competitive Advantage

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The regression coefficients in Table 4.17 predicts the relationship between the variables (security, personal information and reputation, e-banking fraud, legal and regulatory, and e-banking solutions) and competitive advantage. The regression coefficient indicates that security had a negative, but significant influence on competitive advantage since its precision level was <0.05. The regression coefficient indicates that personal information and reputation had a positive, and significant influence on competitive advantage since its precision level was <0.05. The regression coefficient indicates that e-banking fraud had a positive, but insignificant influence on competitive advantage since its precision level was >0.05. The regression coefficient indicates that legal and regulatory challenge had a positive, and significant influence on competitive advantage since its precision level was <0.05. The regression coefficient indicates that e-banking solutions had a positive, and significant influence on competitive advantage since its precision level was <0.05.

4.8 Chapter Summary
This chapter has presented the study findings of the study using tables and figures. Explanations of the presented figures have been given to offer meaning to the readers. The chapter has used descriptive analysis which employed the use of statistical and inferential statistics. The next chapter presents the study discussion, conclusion and recommendations of the study.
CHAPTER FIVE

5.0 DISCUSSIONS, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction
This chapter concludes the study. It offers the summary of the study findings, the study discussions, the study conclusions, and the study recommendations. The chapter is guided by the study results and findings, as well as the study objectives.

5.2 Summary
This study focused on assessing electronic banking channels as a strategy for gaining competitive advantage in banking services in Kenya Commercial Bank (KCB). The specific objectives that guided the study included: to highlight the key factors of e-banking as a competitive advantage tool at KCB, to determine the relationship between e-banking application and competitive advantage of KCB, to establish whether customer preferences influence electronic channels of banks, and to establish challenges and propose solutions to tap opportunities and solve the identified challenges at KCB.

This study used the descriptive research design. The population for the study was all the staff working at KCB whose total number was 235. The sampling frame came from the official list of employees working at KCB in 2017. The study used stratified sampling technique. For the sample size, the study selected 70% of the total population to be the representative which brought the sample size to 165 respondents. Primary data was collected using a self-administered questionnaire attached as Appendix I. Completed questionnaires were analyzed using Statistical Package for Social Science (SPSS). The study used statistical frequencies and percentages for analysis. For likert questions, the study employed the use of means and standard deviations to show the strength and the degree in response differences. Inferential analysis was conducted which entailed Pearson correlation coefficient used to examine the nature of relationships between study variables in terms of significant and insignificant factors. Multiple regression analysis was also be used to show the strength of existing relationships between the study variables, and data was presented using tables and figures.
The study shows that e-banking has become a full-fledged delivery and distribution channel at KCB as a financial products and service. Internet banking is convenient and reduces bank queuing as well as reducing geographical barriers. E-banking at KCB contributes to varying models of cash withdrawals and cash management, and it provides customers with the interactivity that attracts them to utilize the functions of e-banking. KCB consumers understand the meaning and functionality of the security features of e-banking, even though they still have doubts about the trust ability of e-banking privacy policies. KCB assures its customers’ security through provision of privacy statement and information about the security of the shopping mechanisms, and the use of encrypted data packets.

The company’s technical direction and framework for technology is based on development service that is determined by its ICT strategy. ICT strategy supports the strategic objectives of the organization involving development of new and improved products and service capabilities. KCB’s large investments in complex ICT systems have increased its efficiency in creating entry barriers in the market and it is also used to reduce the cost of doing business by reducing transaction costs to both suppliers and customers. E-banking has ensured that KCB policy makers are focused on the growing demand in ICT skills, that they are constantly taking corrective steps to prepare the required numbers and quality beforehand. The e-banking strategy at KCB also focuses on being the low cost producer in the market. The bank emphasizes on the employment of highly experienced staff in online banking, development and refining of existing products and investment in organizational learning.

Electronic banking systems at KCB provide easy access to banking services, and thus leads to higher levels of customer satisfaction and retention. E-banking at KCB has reduced the loan processing time as borrowers loan applications are viewed by the loan processing and loan approval authority simultaneously. Tele-banking (telephone banking) has allowed consumers at KCB to call the bank with instructions to pay certain bills or to transfer funds between accounts. ATM services at KCB has significantly increased productivity during banking hours and they are a cost-effective way of achieving higher productivity per period of time. Personal Computer Banking has allowed KCB customers to perform a lot of retail
banking functions by providing its consumers with the convenience of conducting many banking transactions electronically using the Internet.

Security of information is one of the biggest concerns of KCB’s customers who make use of e-banking, since they face the security risks of having unauthorized access into their banking accounts. As a bank, KCB provides a comprehensive explanation of their policies to their e-banking customers, and their consumers have the right to opt out of certain parts of giving the bank their personal information which makes doing business over the Internet challenging for them. Breaches of security and disruptions to the system’s availability can damage KCB’s reputation, and their reliance on new technology to provide services makes security and system availability the central operational risk of their e-banking. KCB’s security practices are regularly tested and reviewed by outside experts to analyze network vulnerabilities and recovery preparedness, and their challenge is in the form of capacity planning that would address the increasing transaction volumes and new technological developments that take place more often.

5.3 Discussions
5.3.1 Factors of e-Banking as a Competitive Advantage Tool
The study showed that e-banking has become a full-fledged delivery and distribution channel in the bank as a financial products/service. These results are in agreement with Nehmzow (2007) who states that, the Internet is well on its way to become a full-fledged delivery and distribution channel and among the consumer-oriented applications riding at the forefront of this evolution are electronic financial products and services.

The study showed that Internet banking is convenient and reduces bank queuing as well as reducing geographical barriers. These results are similar to Divya and Padmananbhan (2008) who state that Internet banking is convenient because e-banking brings benefits such as no queuing in bank and one can do anywhere and anytime banking, and IAMAI (2006) who note that, Internet banking is convenient, no geographical barriers, low cost and is not bound by operational timings.
The study showed that e-banking contributes to varying models of cash withdrawals and cash management. These results are in tandem with Devlin (2015) who found that, the convenience of e-banking is contributing to varying models in cash withdrawal and daily money management and assisting public achieve greater control of their finances.

The study showed that the provision of customer interactivity is an important criterion that attracts users in the delivery of e-banking. The results are similar to White and Nteli (2014) who found that, the provision of customer interactivity is an important criterion that attracts users in the delivery of e-banking.

The study showed that KCB’s consumers understand the meaning and functionality of the security features of e-banking. These results are similar to Sonja and Faullant (2008) who state that, consumers really understand the meaning and functionality of the security features, and therefore, banks should play their roles in order to influence their customer’s perception of online security.

The study showed that customers have doubts about the trust ability of e-banking privacy policies. The results are in tandem with Gerrard and Cunningham (2013) who state that, customers have doubts about the trust ability of the e-bank’s privacy policies; and trust has striking influence on user’s willingness to engage in online exchanges of money and personal sensitive information (Friedman et al., 2010; Wang et al., 2013).

The study showed that privacy is an important dimension that may affect users' intention to adopt e-banking transaction systems. The results are similar to Friedman et al. (2010) who states that, privacy is an important dimension that may affect users’ intention to adopt e-based transaction systems; and and trust has striking influence on user’s willingness to engage in online exchanges of money and personal sensitive information (Friedman et al., 2010; Wang et al., 2013).
The study showed that security can be assured by providing a privacy statement and information about the security of the shopping mechanisms. According to Dixit and Datta (2010), security can be assured by providing a privacy statement and information about the security of the shopping mechanisms and by displaying the logos of trusted third parties.

The study showed that security plays an important role in internet banking and the several protocols for internet security of encrypted data packets. According to Kolsaker and Payne (2012) and Dong-Her et al. (2004), security plays an important role in internet banking and so there are several protocols for internet security of encrypted data packets.

The study showed that ease of use and accessibility has an impact towards adoption of Internet banking services. These results are in tandem with Poon (2008) who states that, the ease of use and accessibility has positive impact towards Internet banking services, and Pikkarainen et al. (2004) also note that, ease of use is the competitive factor that contributed to the acceptance of the Internet banking services among customers, and as well as with other factors such as security, privacy and convenience (Wang et al., 2010).

The study showed that perception of use is an important determinant of user’s intention to use something that related to the Internet applications. According to Verkatesh (2010), the perception of use is an important determinant of user’s intention to use something that related to the Internet applications. Based on Eriksson et al. (2005) “ease of use” is one of the main determinants of factor that contribute to the popularity of Internet banking usage.

5.3.2 e-Banking Application and Competitive Advantage
The study showed that KCB’s technical direction and framework for technology is based on development service that is determined by our ICT strategy. The results are in tandem with Rosen and Weil (2015) who state that, a company’s technical direction and framework for its technology based developments service is determined by its ICT strategy.
The study showed that ICT strategy supports the strategic objectives of the organization involving development of new and improved products and service capabilities. According to Verkatesh (2010), technical direction and framework for technology plays a part in supporting the strategic objectives of an organization involving development of new and improved products and service capabilities aimed at attaining a competitive edge over the competitive forces in its industry.

The study showed that our large investments in complex ICT systems have increased our firm’s efficiency in creating entry barriers in the market. These results are similar to McKeen and Smith (2012) who state that, large investments in complex ICT systems that increase a firm’s efficiency can lead to a firm creating entry barriers in the market.

The study showed that ICT is used to reduce the cost of doing business by reducing transaction costs to both suppliers and customers. These results are similar to McKeen and Smith (2012) who state that, ICT can be used to reduce the cost of doing business by reducing transaction costs to both suppliers and customers.

The study showed that e-banking has ensured that KCB’s policy makers are focused on the growing demand in ICT skills and they take corrective steps to prepare the required numbers and quality beforehand. These results are similar to Rosen and Weil (2015), who state that, due to the vast development in the area of e-Banking it is essential that the policy makers should focus on the growing demand in ICT skills and take corrective steps to prepare the required numbers and quality beforehand.

The study showed that e-banking strategy focuses on KCB setting out to be the low cost producers in the financial industry. According to McKeen and Smith (2012), cost leadership, the first strategy focuses on the firm setting out to be the low cost producer in its industry.

The study showed that the bank emphasizes on the employment of highly experienced staff in online banking, development and refining of existing products and investment in
organizational learning. According to Verkatesh (2010), capacity planning to address increasing transaction volumes and new technological developments should take account of the budgetary impact of new investments, the ability to attract staff with the necessary expertise, and potential dependence on external service providers.

The study showed that KCB seeks to be unique in the industry through the selection of attributes that many customers perceive as important and positioning them to meet those needs. Gerrard and Cunningham (2013) states that, encryption technology is the most common feature at all bank sites to secure information privacy, supplemented by a combination of different unique identifiers, for instance, a password, mother's maiden name, a memorable date, or a few minutes of inactivity automatically logs users off the account.

The study showed that KCB uses premium pricing for their unique products in the market as a reward for their uniqueness. According to Porter (1985), the firm’s reward for its uniqueness is the premium price it can charge for its unique products or services.

The study showed that e-banking has enabled our customers to access our bank services on a 24/7 scale with minimal human resource involved. According to Gallivan (2014), Internet banking has enabled access to services on a 24/7 scale with minimal human resource involved further reducing on production costs.

5.3.3 Customer Preference of the e-Banking Products from Commercial Banks

The study showed that electronic banking systems provided easy access to banking services. According to Claessens et al. (2012), electronic banking systems provided easy access to banking services. The interaction between user and bank has been substantially improved by deploying ATMs, Internet banking, and more recently, mobile banking.

The study showed that e-banking leads to higher level of customers’ satisfaction and retention. According to Poatoglu and Ekin (2011), e-banking leads to higher level of
customers’ satisfaction and retention, and banks can benefit from lower transaction costs as e-banking requires less paper work, less staffs and physical branches (Cheng, 2012).

The study showed that e-banking reduces loan processing time as borrowers’ loan application can be viewed by loan processing and loan approval authority simultaneously. According to Smith and Rupp (2013), e-banking reduces loan processing time as borrowers’ loan application can be viewed by loan processing and loan approval authority simultaneously. Typically, loan applications received at branch level and send to head office for approval.

The study showed that tele-banking (telephone banking) allows consumers to phone KCB with instructions to pay certain bills or to transfer funds between accounts. According to FTC (2012), telebanking allows consumers to phone their financial institutions with instructions to pay certain bills or to transfer funds between accounts.

The study showed that ATM services increases productivity during banking hours if the service is available in addition to the human tellers. According to Abor (2014), ATM services increase in productivity during banking hours if the service is available in addition to the human tellers.

The study showed that ATMs are a cost-effective way of achieving higher productivity per period of time. According to Rose (2009), ATMs continue to serve customers whiles human tellers in the banking hall have stopped work, thereby increasing productivity for the banks.

The study showed that Personal Computer Banking allows the customer to perform a lot of retail banking functions. According to Rose (2009), PC-Banking is a service which allows the bank’s customers to access information about their accounts via a proprietary network, usually with the help of proprietary software installed on their personal computer. Once access is gained, the customer can perform a lot of retail banking functions.
The study showed that Personal Computer Banking offers consumers the convenience of conducting many banking transactions electronically using a personal computer. According to Rose (2009), PC-Banking offers consumers the convenience of conducting many banking transactions electronically using a personal computer. Consumers can view their account balances, request transfers between accounts and pay bills electronically from home.

The study showed that Point-of-Sale Transfer Terminals allow consumers to pay for retail purchase with a check card, a new name for debit card. According to Chorafas (2008), Point-of-Sale Transfer Terminals allow consumers to pay for retail purchase with a check card, a new name for debit card.

The study showed that debit cards allow customers to debit credit and access instant withdrawal of cash, at convenience stores for example supermarkets, and act as the ATM card for withdrawing cash and as a check guarantee card. According to Mavri and Ioannou (2012), debit cards may also allow for instant withdrawal of cash, acting as the ATM card for withdrawing cash and as a check guarantee card.

5.3.4 Challenges of e-Banking in Commercial Banks

The study showed that security of information is one of the biggest concerns of KCB customers that utilize e-banking. According to Verkatesh (2010), security of information may be one of the biggest concerns to the Internet users. For electronic banking users who most likely connect to the Internet via dial-up modem, is faced with a smaller risk of someone breaking into their computers.

The study showed that e-banking system users still face the security risks with unauthorized access into their banking accounts. According to Smith and Rupp (2013), the electronic banking system users still face the security risks with unauthorized access into their banking accounts.
The study showed that e-banking system users are concerned about non-reputability which requires a reliable identification of both the sender and the receiver of online transactions. According to Kaleem and Ahmed (2008), it is extremely important to build in non-reputability which means that the identity of both the sender and the receiver can be attested to by a trusted third party who holds the identity certificates.

The study showed that as a bank, KCB must provide a comprehensive explanation of their policies to their e-banking customers, and they had a right to opt out of certain parts of giving KCB personal information makes doing business over the Internet challenging for the bank. According to Dixit and Datta (2010), Internet banks must provide a comprehensive explanation of their policies in accordance with this code to every customer. It deals with the collection of information and the consumer's right to opt out of certain parts of it.

The study showed that breaches of security and disruptions to the system's availability can damage the bank’s reputation. According to Kaleem and Ahmed (2008), breaches of security and disruptions to the system’s availability can damage a bank’s reputation. The more a bank relies on electronic delivery channels, the greater the potential for reputational risks.

The study showed that KCB’s reliance on new technology to provide services makes security and system availability the central operational risk of e-banking. According to Dixit and Datta (2010), the reliance on new technology to provide services makes security and system availability the central operational risk of electronic banking.

The study showed that KCB’s security practices are regularly tested and reviewed by outside experts to analyze network vulnerabilities and recovery preparedness. According to Dixit and Datta (2010), banks’ security practices should be regularly tested and reviewed by outside experts to analyze network vulnerabilities and recovery preparedness.

The study showed that KCB’s challenges is in the form of capacity planning that addresses the increasing transaction volumes and new technological developments that take place more
often. According to Verkatesh (2010), capacity planning to address increasing transaction volumes and new technological developments should take account of the budgetary impact of new investments, the ability to attract staff with the necessary expertise, and potential dependence on external service providers.

The study showed that KCB were not fully versed on the laws and regulations that exist on e-banking. According to Smith and Rupp (2013), banks can potentially expand the geographical scope of their services faster through electronic banking than through traditional banks. In some cases, however, they might not be fully versed in a jurisdiction’s local laws and regulations before they begin to offer services there, either with a license or without a license if one is not required.

The study showed that KCB’s virtual banking could unknowingly be violating the customer protection laws, including on data collection and privacy, and regulations on soliciting. According to Kaleem and Ahmad (2016), when a license is not required, a virtual bank lacking contact with its host country supervisor may find it even more difficult to stay abreast of regulatory changes. As a consequence, virtual banks could unknowingly violate customer protection laws, including on data collection and privacy, and regulations on soliciting.

5.4 Conclusions

5.4.1 Factors of e-Banking as a Competitive Advantage Tool

The study concludes that e-banking has become a full-fledged delivery and distribution channel at KCB as a financial products and service. Internet banking is convenient and reduces bank queuing as well as reducing geographical barriers. E-banking at KCB contributes to varying models of cash withdrawals and cash management, and it provides customers with the interactivity that attracts them to utilize the functions of e-banking. KCB consumers understand the meaning and functionality of the security features of e-banking, even though they still have doubts about the trust ability of e-banking privacy policies. KCB assures its customers’ security through provision of privacy statement and information about the security of the shopping mechanisms, and the use of encrypted data packets.
5.3.2 e-Banking Application and Competitive Advantage
The company’s technical direction and framework for technology is based on development service that is determined by its ICT strategy. ICT strategy supports the strategic objectives of the organization involving development of new and improved products and service capabilities. KCB’s large investments in complex ICT systems have increased its efficiency in creating entry barriers in the market and it is also used to reduce the cost of doing business by reducing transaction costs to both suppliers and customers. E-banking has ensured that KCB policy makers are focused on the growing demand in ICT skills, that they are constantly taking corrective steps to prepare the required numbers and quality beforehand. The e-banking strategy at KCB also focuses on being the low cost producer in the market. The bank emphasizes on the employment of highly experienced staff in online banking, development and refining of existing products and investment in organizational learning.

5.3.3 Customer Preference of the e-Banking Products from Commercial Banks
It can be concluded that electronic banking systems at KCB provide easy access to banking services, and thus leads to higher levels of customer satisfaction and retention. E-banking at KCB has reduced the loan processing time as borrowers loan applications are viewed by the loan processing and loan approval authority simultaneously. Tele-banking (telephone banking) has allowed consumers at KCB to call the bank with instructions to pay certain bills or to transfer funds between accounts. ATM services at KCB has significantly increased productivity during banking hours and they are a cost-effective way of achieving higher productivity per period of time. Personal Computer Banking has allowed KCB customers to perform a lot of retail banking functions by providing its consumers with the convenience of conducting many banking transactions electronically using the Internet.

5.3.4 Challenges of e-Banking in Commercial Banks
Security of information is one of the biggest concerns of KCB’s customers who make use of e-banking, since they face the security risks of having unauthorized access into their banking accounts. As a bank, KCB provides a comprehensive explanation of their policies to their e-banking customers, and their consumers have the right to opt out of certain parts of giving
the bank their personal information which makes doing business over the Internet challenging for them. Breaches of security and disruptions to the system's availability can damage KCB’s reputation, and their reliance on new technology to provide services makes security and system availability the central operational risk of their e-banking. KCB’s security practices are regularly tested and reviewed by outside experts to analyze network vulnerabilities and recovery preparedness, and their challenge is in the form of capacity planning that would address the increasing transaction volumes and new technological developments that take place more often.

5.5 Recommendations
5.5.1 Recommendations for Improvement
5.5.1.1 Factors of e-Banking as a Competitive Advantage Tool
KCB’s management should revise its e-banking products and services based on study findings. The bank should ensure that its e-banking services and products are focused on customers’ needs. This will ensure that it has products and services that help customers and are not only important to the bank.

5.5.1.2 e-Banking Application and Competitive Advantage
KCB should use the Importance/Performance grid as a strategic tool to determine and develop strategies that will give it a clear pictorial presentation of the factors that are critical to e-banking. From the Importance/Performance grid, it is important that KCB develops e-banking strategies with the focus of wanting customers to use and be satisfied with their e-banking platform, and they must implement personalized aspect to their products and services.

5.5.1.3 Customer Preference of the e-Banking Products from Commercial Banks
KCB should pay special attention to convenience by providing its customers with electronic banking service at points which can be easily accessible. For instance, some ATMs should be installed in supermarkets, learning institutions and medical centers. The bank can also offer
mobile applications that can be downloaded and be used in smartphones to allow users to access banking services from their gadgets.

5.5.1.4 Challenges of e-Banking in Commercial Banks
KCB should also provide customers with a toll free number that will handle customers with complaints and general feedback about the electronic banking services. This would not only provide a service to a customer that is free, but also provide the bank with valuable information for future development on electronic services that would minimize existing challenges.

5.5.2 Recommendations for Further Studies
This study focused on electronic banking channels as a strategy for gaining competitive advantage in banking services. The study was limited in terms of organizations studied which in this case was KCB, and the scope of study which was e-banking. It therefore recommends that further studies be carried out in other financial institutions to provide concrete findings, and other studies to be carried out on other competitive factors that may apply to financial institutions.
REFERENCES


APPENDICES
APPENDIX I: QUESTIONNAIRE

Kindly fill the following questionnaire appropriately.

Part A: Demographics

1. Kindly indicate your gender.
   Male ( )   Female ( )

2. Kindly indicate your age bracket.
   25 Years and below ( )  26-35 Years ( )  36-45 Years ( )  46-55 Years ( )
   56 Years and Above ( )

3. Kindly indicate your level of education.
   O level ( )  Certificate ( )  Diploma ( )  Higher Diploma ( )
   Degree ( )  Masters ( )  PhD ( )  Other ( )  Specify ______________________

4. Kindly indicate your position in the organization.
   Senior Manager ( )  Line Manager ( )  Operational Manager ( )
   Regular Staff ( )
Part B: Factors of e-Banking as a Competitive Advantage Tool in Kenya

5. Kindly indicate the extent to which each of these factors have been used by your organization to gain competitive advantage. Use the following scale rating whereby: SD=Strongly Disagree, D=Disagree, MA=Moderately Agree, A=Agree, and SA=Strongly Agree.

<table>
<thead>
<tr>
<th>Factor</th>
<th>SD</th>
<th>D</th>
<th>MA</th>
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<tbody>
<tr>
<td>E-banking has become a full-fledged delivery and distribution channel in the bank as a financial products/service</td>
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<tr>
<td>Internet banking is convenient and reduces bank queuing as well as reducing geographical barriers</td>
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<tr>
<td>E-banking contributes to varying models of cash withdrawals and cash management</td>
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<td>The provision of customer interactivity is an important criterion that attracts users in the delivery of e-banking</td>
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<td>Our consumers understand the meaning and functionality of the security features of e-banking</td>
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<td>Customers have doubts about the trust ability of e-banking privacy policies</td>
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<td>Privacy is an important dimension that may affect users' intention to adopt e-banking transaction systems</td>
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<td>Security can be assured by providing a privacy statement and information about the security of the shopping mechanisms</td>
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<td>Security plays an important role in internet banking and the several protocols for internet security of encrypted data packets</td>
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<td>Ease of use and accessibility has an impact towards adoption of Internet banking services</td>
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<td>Perception of use is an important determinant of user’s intention to use something that related to the Internet applications</td>
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Part C: e-Banking Application and Competitive Advantage in Kenya Commercial Bank

6. Kindly indicate the extent to which e-banking application has given your competitive advantage. Use the following scale rating whereby: SD=Strongly Disagree, D=Disagree, MA=Moderately Agree, A=Agree, and SA=Strongly Agree.

<table>
<thead>
<tr>
<th>Statement</th>
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<tr>
<td>Our company’s technical direction and framework for technology is based on development service that is determined by our ICT strategy</td>
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<td>ICT strategy supports the strategic objectives of the organization involving development of new and improved products and service capabilities</td>
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<td>Our large investments in complex ICT systems have increased our firm’s efficiency in creating entry barriers in the market</td>
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<td>ICT is used to reduce the cost of doing business by reducing transaction costs to both suppliers and customers</td>
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<td>E-banking has ensured that our policy makers are focus on the growing demand in ICT skills and they take corrective steps to prepare the required numbers and quality beforehand</td>
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<td>E-banking strategy focuses on KCB setting out to be the low cost producers in the financial industry</td>
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<td>The bank emphasizes on the employment of highly experienced staff in online banking, development and refining of existing products and investment in organizational learning</td>
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<td>A firm seek to be unique in the industry through the selection of attributes that many customers perceive as important and positioning them to meet those needs</td>
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<td>We use premium pricing for our unique products in the market as a reward for our uniqueness</td>
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<td>E-banking has enabled our customers to access our bank services on a 24/7 scale with minimal human resource involved</td>
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**Part D: Customer Preference of the e-Banking Products from Commercial Banks**

7. Kindly indicate the extent to which customers prefer e-banking products that are provided by your organization. Use the following scale rating whereby: SD=Strongly Disagree, D=Disagree, MA=Moderately Agree, A=Agree, and SA=Strongly Agree.

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<th>SD</th>
<th>D</th>
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<tr>
<td>Electronic banking systems provided easy access to banking services</td>
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<td>E-banking leads to higher level of customers’ satisfaction and retention</td>
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<td>E-banking reduces loan processing time as borrowers loan application can be viewed by loan processing and loan approval authority simultaneously</td>
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<td>Tele-banking (telephone banking) allows consumers to phone their financial institutions with instructions to pay certain bills or to transfer funds between accounts</td>
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<td>ATM services increases productivity during banking hours if the service is available in addition to the human tellers</td>
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<td>ATMs are a cost-effective way of achieving higher productivity per period of time</td>
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<td>Personal Computer Banking allows the customer to perform a lot of retail banking functions</td>
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<tr>
<td>Personal Computer Banking offers consumers the convenience of conducting many banking transactions electronically using a personal computer</td>
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<td>Point-of-Sale Transfer Terminals allow consumers to pay for retail purchase with a check card, a new name for debit card</td>
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<tr>
<td>Debit cards allow customers to debit credit and access instant withdrawal of cash, at convenience stores for example supermarkets, and act as the ATM card for withdrawing cash and as a check guarantee card</td>
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### Part E: Challenges of e-Banking in Commercial Banks

8. Kindly indicate the extent to which your organization has faced these challenges that are related to e-banking. Use the following scale rating whereby: SD=Strongly Disagree, D=Disagree, MA=Moderately Agree, A=Agree, and SA=Strongly Agree.

<table>
<thead>
<tr>
<th>Challenge</th>
<th>SD</th>
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<tr>
<td>Security of information is one of the biggest concerns of our customers that utilize e-banking</td>
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<td>E-banking system users still face the security risks with unauthorized access into their banking accounts</td>
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<td>E-banking system users are concerned about non-repudiability which requires a reliable identification of both the sender and the receiver of online transactions</td>
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<td>As a bank, we must provide a comprehensive explanation of our policies to our e-banking customers</td>
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<td>Consumer's right to opt out of certain parts of giving us personal information makes doing business over the Internet challenging for us</td>
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<td>Breaches of security and disruptions to the system’s availability can damage our reputation</td>
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<td>Our reliance on new technology to provide services makes security and system availability the central operational risk of e-banking</td>
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<td>Our security practices are regularly tested and reviewed by outside experts to analyze network vulnerabilities and recovery preparedness</td>
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<td>Our challenges is in the form of capacity planning that addresses the increasing transaction volumes and new technological developments that take place more often</td>
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<td>As a bank, we are not fully versed on the laws and regulations that exist on e-banking</td>
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<td>Our virtual banking could unknowingly be violating the customer protection laws, including on data collection and privacy, and regulations on soliciting</td>
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Part F: Competitive Advantages Measures in Electronic Banking

9. Kindly indicate the extent to which your organization has faced these challenges that are related to e-banking. Use the following scale rating whereby: SD=Strongly Disagree, D=Disagree, MA=Moderately Agree, A=Agree, and SA=Strongly Agree.

<table>
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<tr>
<td>Electronic Banking results in the actionable output of intelligence ascertained by the needs prescribed by the bank</td>
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<td>E-banking function plays a role in the early identification of risks and opportunities in the market before they become obvious</td>
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<td>The primary basis for average performance of organizations is their sustenance of competitive advantage</td>
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<td>The cost advantage of e-banking sources vary depending on the industry structure</td>
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<tr>
<td>Banks aiming to apply the low-cost producer strategy strives to exploit all sources of cost advantage</td>
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<td>E-banking has enabled access to services on a 24/7 scale with minimal human resource involved further reducing on production costs</td>
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<tr>
<td>Banks Select one or more attributes that many customers perceive as important and positioning them meet their needs</td>
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THANK YOU