EFFECTS OF TECHNOLOGY INTEGRATION STRATEGY ON THE CUSTOMER SERVICE DELIVERY AT BARCLAYS BANK OF KENYA

BY

AARON MUTETI NZIOKI

UNITED STATES INTERNATIONAL UNIVERSITY-AFRICA

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

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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 United States International University in Nairobi for academic credit.

Signed: __________________________  Date:________________________
Aaron Muteti Nzioki (Student ID: 651202)

This project has been presented for examination with my approval as the appointed supervisor

Signed: __________________________  Date:________________________
Dr. Joyce Ndegwa

Signed: Date:________________________  Date:________________________
Dean Chandaria School Of Business
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ABSTRACT
The purpose of this study was to evaluate the effect of technological integration on the customer service delivery. The study focuses on four components of technology integration, notably; internet banking, mobile banking, electronic payment and automated cash machines. The study was guided by the following objectives; to evaluate the influence of internet banking on customer service delivery, to assess the effect of electronic payments on customer service delivery, to evaluate the influence of mobile payments on customer service delivery and to assess the effect of automated cash machines on customer service delivery.

The study utilized descriptive research design. This approach is deemed compatible with this case study, as it enables the researcher make extensive cross examination of the subject under investigation and proceed to utilize quantitative models in presenting the findings. The target population for this study was the 201 Barclays Bank employees commercial banks head office. A sample of 132 employees was determined using Morgan and Krejcie model. The study utilized a structured questionnaire as the primary tool for data collection. The questionnaire was subdivided into five section which represented different themes covered in this study. The data was computed using excel and SPSS. Descriptive statistics including, measures of central tendencies such as means and standard deviation, and inferential statistics, which is regression analysis were used to present the data that was collected from the field survey exercise.

The study found that there exists a strong positive correlation between internet banking and customer service delivery registering an r-value of 0.864. The study further established that, internet banking accounts for 74.6% in variability for the customer service delivery. The study established that mobile banking strategy has significantly contributed towards enhancing customer service delivery for the banking services. The study found that, mobile banking account for 54.8% in variability for the customer service delivery. The study established that, electronic payments account for 39.8% in variability for customer service delivery with an r-value of 0.631, which deduce a strong positive correlation. The study established that automated cash machines have contributed significantly towards enhancing bank services to commercial bank customers.
The study concludes that internet banking has significantly enhanced methods through which people make online commercial transactions thus giving bank customers flexibility through which to make online transactions in a flexible and reliable way. The study concludes that, internet banking has enabled commercial bank customers enjoy smarter and easier banking experience. Further, the study concludes that introduction of mobile banking has expanded significantly accessibility to banking services for many unbanked customers. Also the study conclude that electronic payments has enabled bank customers enjoy flexibility in that, they are able to make transactions such as purchases, order payments and currency flexibility enhancing user convenience. Finally, the study concludes that Automated Cash Machines have contributed towards improved cash handling security and also offering bank customers easier access to cash.

The study submits a recommendation that, commercial banks prioritize internet banking security and roll out awareness campaigns to their customers to educate them on ways to avoid falling into cyber fraud traps. The study also recommends for the expansion of the internet infrastructure to boost up the customer base. Further, the study recommends for simplification of mobile banking procedures to enable more people use the platforms much easier. In addition, the study recommends that commercial banks should consider expanding the daily and quantity limits for electronic payments to enhance customer flexibility. Finally, the bank recommends for the more education on importance of utilizing cash machines by small businesses in effort to tap more customers into the platforms.
ACKNOWLEDGEMENT

First and foremost I thank God the Almighty, without His will I would have never found the right path. His mercy was with me throughout my life and ever more in this study. I thank Him for enlightening my soul with the love and compassion for the other humans and allowing me to enter a field where I could practice this desire.

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DEDICATION

I dedicate this research project to God Almighty, my strong pillar and source of inspiration. He has been the source of my strength throughout this program and on His wings only have I soared.
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LIST OF ABBREVIATIONS (ACRONYMS)

ATM : Automated Teller Machines
BBK : Barclays Bank of Kenya
CBA : Commercial Bank of Africa
EFT : Electronic Fund Transfer
EU : European Union
EGC : Electronic Government Center
ICT : Information Communication and Technology
KCB : Kenya Commercial Bank
PDQ : Process Data Quickly
CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Problem

Technology has been at the heart of corporate world influencing business processes and activities for the past three decades. Emergence of internet and in the early 80’s, marked a second generation of technology disruption from the arrival of the micro-chips which transformed the business environment. Internet and electronic innovations, contributed to the introduction of electronic transactions, including the internet banking and electronic payments (Tchouassi, 2012; Vyas, 2012). Further progress in the mobile technology, has transformed mobile devices into business centers enabling people to make mobile payments and make numerous business transactions (Pikkarainen, Pikkarainen & Karjaluoto, 2004; Tchouassi, 2012; Tillya, 2013). Besides enabling instant and faster business transactions, technology has contributed to operational adjustments on how businesses operate and how customers are served.

The integration of technology across diverse business sectors has been made possible by existence of supporting infrastructure, such as computers, mobile phones, fiber optics etc which have made it possible for the connection between businesses and customers (Ramadhan, 2012). Technology has motivated businesses to transition from reliance on manual processes to adoption of electronic systems, which offer the operating edge in speed and capacity. Platforms such as Automated Cash Machines, have enabled the concept of cashless transactions make way in business world, giving both business outlets and customers enjoy flexibility of handling financial transactions (Tillya, 2013).

Throughout the technology age, one constant determinant has been the acceptance of the technology by the masses, whether the users or the implementers (Berger & Black, 2011). Technology acceptance gave factor, formed the foundation for the Technology Acceptance Model (TAM), which has been accepted as the theoretical basis for examination of the likelihood of technology adoption and success (Marangunic & Granic, 2015).
The introduction of technologies, such as the electronic banking systems, mobile and internet banking have revolutionized access to financial services (Amaoko, 2012). Technological applications, have integrated sophisticated support mechanisms that imitate some of the physical financial transaction tasks that are executed at the banking hall (Berger & Black, 2011). Emergence of these technological applications in the financial sector, has demonstrated the positive benefits that bank customers can accrue, in seeking and accessing financial services from the lenders (Simon & Usunier, 2007). McKechnie et al. (2006) listed the success of electronic banking technology as the unique value that these technologies impacted on the growth of the banking sector. In addition, McKechnie et al. (ibid), attributed banking sector as a valuable case for technology acceptance theory.

Numerous financial services that commercial banks offer to their customers have now been simplified, thanks to the integration of Information Communication and Technology (ICT) infrastructure over a large network across wide area (Masila, Chepkulei & Shibairo, 2015). Diverse banking services, including internet banking, mobile banking and electronic payments have presented commercial banks with opportunity to innovate service delivery (Berger & Black, 2011). Castells (2001) revealed that, monetary transactions valued in billions of dollars can only take place in seconds in the electronic circuit throughout the globe by pressing a single button. According to Loonam et al (2008), ICT advancements, globalization, competition and changing social trends such as heightened customer pro-activeness and increased preferences for convenience have contributed to diversifying access financial services.

Aduda and Kingoo (2012) divulged that technological systems have been at the centre of banking sector in Kenya. The application of information and communication technology concepts, techniques, policies and implementation strategies to customer service delivery has become a subject of fundamental importance and concerns to all banks and indeed a prerequisite for local and global competitiveness banking (Lin, 2011). The advancement in Technology has played an important role in improving service delivery standards in the Banking industry. In its simplest form, Automated Teller Machines (ATMs) and deposit machines now allow consumers carry out banking transactions beyond banking hours. With
online banking, individuals can check their account balances and make payments without having to go to the bank hall (Kiragu, 2017).

The introduction of innovative banking platforms like the mobile banking, played a significant role in not only access to financial services but also how ordinary people can approach banking services (Siami, 2006). This revolution has touched every aspect of people’s life including banking. Over the years, banking has transcended from a traditional brick-and-mortar model of customers queuing for services in the banks to modern day banking where banks can be reached at any point for their services (Muriuki, 2013). Today, banks have welcomed wireless and mobile technology into their boardroom to offer their customers the freedom to pay bills, planning payments while stuck in traffic jams. Today, more people than ever are banking on the move rather than attending bank offices.

Mobile phone banking products in Kenya include Mshwari by CBA and Safaricom, the recently launched Equitel by Equity and Airtel, Patacash by Post bank, Hello money by Barclays, Mobibank by KCB and Pesapap by Family bank among others. Mshwari was launched in November 2012. On day one of its launch 70,000 people subscribed for its services. Within the first 100 days, it had 32000 new customers and one million customers in 41 days. By April 2013, 3 million customers had subscribed. The high number of registrations shows that indeed this was technically feasible and commercially viable. It is yet to be seen if the other mobile phone banking products in the market will significantly improve commercial banks performance as it has been seen with CBA’S Mshwari.

Automated systems, notably the cash deposit machines, have simplified the process of making cash deposits, with an easier option of depositing cash and eliminating the need to physically queue for long periods of time at the banking halls (Muriuki, 2013). On the other hand, internet banking has significantly simplified execution of basic financial services, which has created an opportunity for faster banking operations (Abubakar & Tasmin, 2012). As the banking industry becomes global in nature, faces a competitive environment; banks are forced to balance the goals of outreach and sustainability. ICT platforms may be the instigator of this new environment and the prime mover in terms of providing the potential solution for bank’s survival in the near future (Anyasi, et al 2009; Musiime, 2010; Hazlina, et al 2011; Hazlina, et al 2011). Research has proven that, electronic banking services (EBS)
are the wave of the future banking by providing enormous benefits to consumers in terms of ease and cost of transactions through online banking (Nsouli, et al, 2002).

Technological platforms such as the Automated Teller Machine (ATM) operate as a bank teller by receiving and issuing money to and from the ATM account holders/users (Singh, 2009). ATM means neither “avoids traveling with money” nor “any time money,” but certainly implies both (Singh & Komal, 2009). ATM cards are fast replacing confounding withdrawal forms as a convenient way of getting your money from banks. In a way, they are rewriting the rules of financial transaction. A smart person no longer needs to carry a wallet-full of paper money; rather, what he/she needs to do is to fish out an Automated Teller Machine (ATM) card from his/her pocket, insert it in the slot of the machine, punch in a few details and go home with hard cash (Singh & Komal, 2009).

Evidently, numerous innovative platforms and evolution of technology, has been central to the success of the technological integration strategies used in the banking industries. Technology Acceptance Model is based on the concept of acceptance where in this case, it’s the acceptance by the users and customers. Shin and Kim (2008) explained that, TAM theory helped to favorably shape the permeation of the Web 2.0, across different sectors, including the banking industry. Besides the aspect of technological utilization after acceptance, it’s important that people also examine the effects of these technologies in its diverse aspects. Pikkarainen et al. (2004) identified the success of online banking based on the concept of TAM theory in acceptance of financial transactions. This study will articulate the aspect of customer service delivery in the scope of Technology Acceptance Model. TAM theory was found convenient for this study, considering that it links the value of technology use with its acceptance by the users. This study will examine the technologies used by commercial banks in offering different financial services to the commercial banks customers and will evaluate how ease or difficult it was to implement the different technologies.

The banking sector has continuously welcomed the adoption and use of new technologies in the delivery of diverse banking services (McKechnie, Winklhofer & Ennew, 2006). These technological advances have revolutionized the delivery of banking services, positioning the players in the financial sector at a vantage point in revolutionizing financial services delivery to the bank customers. The acceptance of banking technologies during the age of
technological revolution shows that there has been good outcome in the value of these technologies. According to Davis, Bagozzi and Warshaw (1989), who are considered the pioneers of the technology acceptance theory, acknowledged that, value outcome that is attributed to a particular technology, is central to the success of this technology.

Barclays bank of Kenya is one of the largest commercial banks in Kenya, with a market capitalization of over KSH. 200 Billion (Barclays Bank of Kenya [BBK], 2018). BBK operates in all major cities in the country accounting for sizeable market share, with their customers largely made up of urban employed. As with nearly all players in the Kenyan financial sector, BBK has embraced the use of diverse technological platforms in offering services to their customers. BBK has significantly invested in attracting and maintaining, what would be referred to as high caliber customers, who include people in business and high paying jobs. BBK has demonstrated strength in internet banking and the electronic payments, where its customers are able to access financial services in a smarter and more secure way.

The primary role of Barclays Bank is to offer financial services and solutions to corporate, small businesses and also ordinary customers. To date, BBK has technology driven programs and platforms whose main role is to offer limitless financial services to all the customers. The main concern for customers who have subscribed for various financial products offered by BBK is the reliability consistency and trust. This has been the main motivation for the bank commitment to heavy investment on the technological platforms.

Barclays bank of Kenya has also invested significantly in the acquisition and the distribution of “Process Data Quickly” (PDQ) machines, which enable business outlets such as fuel pump stations, restaurants, etc, accept electronic payments using credit and debit cards. Through the electronic payments platforms, BBK has extended partnerships with global financial solutions companies such as Visa and Master Card, to enable its customers access funds in multiple places and across the world without any hitches. Beside the electronic services, BBK has diverse financial products that are available to their customers via the electronic platforms. In these platforms, premium BBK customers are able to access financing through their credit cards without existence of any limitations and can service their credit bills at convenient periods as arranged with the bank. This study sought to evaluate the value of
technology integration on the customer service delivery for the Barclays bank of Kenya customers.

1.2 Statement of the Problem
Evidence from around the world demonstrates a sizeable acceptance of the new reality that technology is a critical component of delivering financial services. Jorollahi (2013) examined the impact of electronic payments in Cyprus, in accelerating business processes, found increased operational benefits for service providers, however little is known on the customers preference for tech advances. Hazlina (2011) linked increase in online financial transactions in Singapore due to the convenience in saving customers time in making financial transactions.

Mapharing and Basuhi (2017) found increased interest in electronic-banking in Botswana, however failed to scrutinize the accessibility and acceptance of such services for the people in the rural areas in Botswana, where support infrastructure for technology systems is still poor. A study by Tillya (2015) examined the effects of Automated Teller Machine (ATM) services on customer satisfaction within the Tanzanian banking sector. The study revealed that, ATM were rated as very helpful to a number of customers as they operated on a 24 hour basis, giving users significant flexibility.

The financial sector in Kenya has experienced ferocious competition in the recent past driven by huge number of players in the sector all competing for the slim customer base. Commercial banks face the difficulty of attracting and retaining high value customers, forcing the financial sector players identify ways to best satisfy their customers. Electronic financial solutions have been at the heart of financial services revolution for the past quarter of a century (Tchouassi, 2012). In Kenya, the emergence of mobile banking formed the breakthrough in extending access to financial services to the millions of the unbanked citizens (Lun, Lule, Omwansa & Waema, 2012).

Data from safaricom indicate that at the close of the year 2016, nearly 19 million Kenyans were actively using Mobile money services (Safaricom, 2016). Advent of unique electronic platforms, buoyed by the dotcom bubble transformed ways in which commercial banks operated and serve their customers. Periodically, newer and smarter technologies are
continuously being introduced to improve financial services access. However, little is known as to what is the effect of technology integration strategies on the realization customer service delivery goals among the commercial bank customers, which warranting the need to conduct the study.

A study by Juma (2013), examined the influence of electronic banking services on the customer services delivery within the banking sector in Kenya. The study identified, speeds in transaction as one of the benefits that customers accrue. Masila et al. (2015) examined the effect of agency banking technologies on the customer satisfaction. The study found that, existing technological infrastructure has made it possible for banks to expand accessibility to services to many encouraging financial inclusivity for the unbanked.

Kathuo (2015) used electronic banking data to examine the effect of mobile money on customer satisfaction and the subsequent performance of commercial banks. The study revealed that mobile banking services, simplified basic financial transactions such as making payments, but also risked users on impulse expenditures, which was blamed for rise in poor financial management skills.

A comparative study by Lun et al. (2012) assessed the validity of Technology acceptance Model in the Mobile Banking Technologies in the Kenya. The study found positive association between innovative financial solutions and subsequent acceptance of such solutions among the bank customers. Tchouassi (2012) examined the role of technological systems in offering the financial services to the unbanked, and how it contributed to financial inclusivity. The study revealed that simplicity in service delivery, served as a good attribute in attracting the unbanked citizens to explore on the banking services.

The center of focus in studies by Juma (2013), Kathuo (2015), Masilla et al. (2015) and Njogu (2014) on subject of banking technologies has dwelled on the aspect of technology implementation and its effect on performance of commercial banks. There has been little focus on the effect of commercial banks technology integration strategy on the customer service delivery (Massila et al., 2015). There is little evidence describing impacts of technology integration initiative in enhancing the experience of commercial banks customers, which has necessitated the need to undertake this study. This study sought to undertake
extensive evaluation on the effect of technology integration on the customer service delivery for bank customers. The study examined the main components of banking technologies, notably; internet banking, mobile banking, electronic payments and the automated cash machines and their effect on the customer service delivery for Barclays bank of Kenya Clients.

1.3 Purpose of this Study
The main purpose of this study was to evaluate the effect of technology integration strategy on the customer service delivery at the Barclays bank of Kenya.

1.4 Research Questions
1.4.1 What is the effect of internet banking on the customer service delivery at the Barclays bank of Kenya?

1.4.2 What is the influence of mobile banking on the customer service delivery at the Barclays bank of Kenya?

1.4.3 To what extend does electronic payments initiative influence the customer service delivery at the Barclays Bank of Kenya?

1.4.4 What is the effect of Automated Cash Machines program on the Customer service delivery at the Barclays bank of Kenya?

1.5 Justification of the Study
1.5.1 Management of Barclays Bank of Kenya
The researcher hopes that, the management of Barclays bank of Kenya appreciates the importance of technological integration in offering financial services to their clients. The study elaborates diverse ways through which customers interact with technological platforms when seeking financial services, whether physically at the banking halls or remotely using their mobile devices. The study has examined the areas which need improvement for customer experience and has documented it accordingly to share with the Barclays bank management. Eventually, the researcher hopes that the managers will implement the
recommendations arrived as a strategic initiative to enhance the utilization of technological systems in the delivery of financial services to their customers.

1.5.2 Managers of Commercial Banks in Kenya

The study examined the most important unit of observation which is the banking institution and how the integration of technological platforms impacts on the customer service delivery. The researcher hopes that, the managers of commercial banks in the country will greatly benefit from the study recommendations, which lays down the path to ensuring optimal customer experience in access to financial services through existing technological platforms.

1.5.3 The Government

Technology integration in banking sector is an important aspect of dynamic financial sector. As such, the policy makers in government can gain an understanding on the state in customer service delivery by commercial banks. This goes a long way in identifying areas that need reforms so as to enhance access to finances for many citizens. The researcher hopes that, upon the recommendations made can be used by policy makers and legislators to propose legal frameworks that will streamline the utilization of ICT platforms in offering financial services to the citizens.

1.5.4 The Academicians and Scholars

Technology in the financial sector is an ever changing topic of discussion. Evidence indicates that literature is replete with content of evolution of financial systems and technologies. Significantly so, developed countries have witnessed an array of innovations in banking technologies and subsequent dangers it comes with. However, in the local environment, evidence of technological integration in access to financial services is foremost, thanks to massive success of mobile banking. The researcher hopes that, the findings of this study enrich the subject on customer service delivery within the commercial banks. The researcher hopes that, the recommendations on technological platforms covered in this study will be used by future researches as a source of reference for advanced studies in the topic.
1.6 Scope
The study focused on the Barclays bank of Kenya. The study focused on the effect of technology integration on the delivery of services to Barclays bank customers. The target population was the employees working at the Barclays bank Kenya HQ. The study sought feedback on the impact of technology integration on customer service delivery at the Barclays bank of Kenya. This was valuable as commercial bank employees were well placed to attest to the customer trends considering that they possessed experience of interacting with customers. The study was conducted for a period of three months, between the months of May through July, in the year 2018.

1.7 Definition of Terms

1.7.1 Technology Integration

This is the process of implementing digital systems framework in the execution of tasks to improve on speed and improve the levels of efficiency (Aliya & Tasmini, 2012).

1.7.2 Customer Service Delivery

This is the process of serving customers through attending to their wants which they have committed to pay for (Tillya, 2013).

1.7.3 Internet Banking

This is the execution of banking services such as cash transfer, making payments, evaluating the expenditure over the internet. The bank customers are able to access their bank accounts through the internet and make these transactions in a secure website that is owned by a particular bank (Simon & Usunier, 2007).

1.7.4 Mobile Banking

This is the process of making financial transactions such as mobile payments, mobile money transfer through the mobile phones (Ongori, 2013).
1.7.5 Electronic Payments

This refers to the process of executing and completing payments using electronic means such as the credit or debit cards, or funds transfer such as the western union and money gram (Aduda & Kingoo, 2012).

1.7.6 Automated Cash Machines

These are electronic money booths that resemble ATM’s but have dynamic flexibility such as, enabling cash deposits, check deposits and cash payments outside the physical banking hall (Tillya, 2013).

1.8 Chapter Summary

This section of the study examined the background of the technology integration strategy within the commercial banks in the past few years of the technological revolution era. Chapter one covered the background of the study, which introduces the research topic and offers a deep examination of the background the research problem. The specific areas covered include; the statement of the problem, purpose of the study, research questions, significance of the study, scope of the study and the definition of Key terms. Chapter two covers the literature review, examining past studies that have been done on the effect of technology integration on customer service delivery. Chapter three reviews the research methodology which details the process that was used in data collection. Chapter four presents the data gathered from the field survey and secondary data obtained from the equity banks published accounts. Finally, chapter five covers a summary of the findings, discussion, conclusion and recommendations for the study.
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

Literature review centers on extensive review of the existing information with regard to the topic of study. This section of the study will focus on an extensive evaluation on past studies centering on the importance of integrating technology towards the facilitating of customer service delivery. The study will also examine the existing literature on the integration of technology in customer service delivery and the theoretical implication for the technology acceptance model within the scope of commercial banks and the strategies they use in facilitating customer service delivery.

2.2 Internet Banking Strategy and Customer Service Delivery

The growth in internet banking is viewed as a progressive shift from the traditional PC Banking (Kiragu, 2017). Facilitation of the internet banking relies on the transmission platforms by which to execute financial transactions, for example, transferring funds, paying bills, viewing checking and savings account balances, paying mortgages, and purchasing financial instruments and certificates of deposit. Customers using internet-banking access their accounts via online platforms commonly referred to browsers, which are interlinked with servers over the internet thus accessible form ordinary computing devices (Timothy, 2012).

Chavan (2013) defined internet banking as an Internet portal through which customers can use different types of banking services. Internet banking can also be viewed as the access to banking products and services through electronic distribution platforms. Vyas (2012), define a “true Internet bank” as one that provides account balances and some transactional capabilities to retail customers over the World Wide Web. Internet banks are also known as virtual, cyber, net, interactive, or web banks. According to Njogu (2014), internet banking is defined as the provision of retail and small value banking products and services through internet channels. Such products and services can include deposit taking, lending, account management, the provision of financial advice, electronic bill payment, and the provision of
other electronic payment products and services such as electronic money processed over the internet.

2.2.1 The Structure of Internet Banking Strategy

Bank clients can access financial services (i.e. whether it is transactional or no transactional) through online channels from anywhere at any point of time (Weldearegay, 2017). Internet banking channels enable individuals to make real-time financial decisions conveniently independently of time and location (Sikdar, Kumar, & Makkad, 2015). Mishra and Bisht (2013) pointed out electronic banking enables customers to access financial services without limit in time, place, and the type of agents they use. The core use of online banking, therefore, are convenience and low-cost advantage thereby customer satisfaction (Aliyu, Rosmain, & Takala, 2014). The provision of electronic banking becomes a lucrative business and the area where companies compete to gain competitive advantage and increase efficiency (Dauda & Lee, 2015).

Markets globally fall into four levels of online banking adoption: devotee, advanced, intermediate, and undersized (Datamonitor, 2014). As to the report indicated, factors such as consumer attitudes, existing online services, and the state of the Internet infrastructure underpin the success or failure of online banking adoption strategy. In this case, the online banking adoption level in the sub-Saharan region such as Ethiopia may fall under the fourth level - undersized. As compared to the developed market, hence, the pace and scale of adoption and usage of electronic banking channels in developing countries remained immature and resulted in notable financial exclusion (World Bank, 2014; Yang, Pang, Liu, Yen, & Tam, 2015). In India, for example, awareness, self-efficacy, ease of use, usefulness, and security were the criteria responsible for making ATM, the most preferred channel for adoption (Mishra & Singh, 2015). Weldearegay (2017) identified accessibility, trust, ease of use and usefulness as the main determinants of user experience with a specific institution’s internet banking products.

Recent literature on e-banking adoption also emphasizes on theoretical models such as consumer’s acceptance (Sikdar, Kumar, and Makkad, 2015), culture and security (Baptista and Oliveira, 2015; Mortimer, Neale, Hasan, and Dunphy, 2015), technology, organizational,
and environmental factors (Aboelmaged, 2014). The influence of e-business strategies on the internet banking adoption and use in the case of developing countries such as Kenya, however, has received less attention in most of the works of recent literature. Exploring the approaches that banks pursue to mobilize existing customers toward the use of internet banking applications will be highly beneficial in this study.

2.2.2 The Forms of Internet Banking and Payments

According to Firdous and Farooqi (2017) the internet is the least expensive conveyance channel for managing an account items since by utilizing the web as a channel of conveying operations, commercial banks can lessen the number of branches and the number their staff. Timothy (2012) characterized Internet Banking as a tech advancement whereby clients handle their own particulars in relation to managing their bank account transactions without visiting commercial banks physically. Existing proof proposes that an Internet-based shopper handling financial transaction might be compelled, with reports of more gainful, faithful and reliable mechanism without the need for third parties (Nimako, Gyamfi & Wandaogou, 2013). Bernal (2017) submitted that banks currently view Internet as a similarly essential platform as the conventional banking platforms, such as the automated teller machines (ATM), mobile banking and electronic transactions. With advancements in the modern banking standards, Internet Banking is progressively captured as an operational mechanism and a critical component of multi-channel banking standards (Firdous & Farooqi, 2017).

Meuter (2010), classified Internet banking adoption into two categories which includes access technology and infrastructure related factors and sector specific retail banking factors. The first class include internet penetration rates, skill of consumers in using internet and related technologies, attitude towards technology, security and privacy concerns. The second class involves trust in banking institution, banking culture, e-banking culture and Internet banking push. Analyzing the Acceding and Candidate countries’ (ACCs) adoption of Internet banking, Meuter (ibid), shows that lack of PC and internet penetration is still an entry barrier for internet banking development both in EU15 and ACCs.

The cost of access services is a main issue for the PC and Internet penetration especially in Central and Eastern Europe countries. On the other hand, there has been a lack of confidence
in the banking sector in ACCs due to past turbulent periods. These concerns are further aggravated with privacy concerns. Degree of banking service usage and e-banking culture are also weaker in ACCs compared to EU-15. However significant cost saving was in overall commercial bank operations, as an outcome of enhanced customer performance A study by Akerlof and Girardone (2011), show that E-banking results in cost and efficiency gains for banks yet very few banks are using it. Both studies by Akerlof and Girardone (2011), and Meuter (2010) did not elaborate on the effect of internet banking on enhancing the overall experience of bank customers.

2.2.3 Effects of Internet Banking Strategy

Internet banking has simplified life for some people to whom it is a better way to bank while to others it might appear to be a complex and intimidating process. Advantages of internet banking include; convenience due to 24-hour reliability (compared to traditional banks that run on daytime 5.5 days a week), transactions speed and effectiveness: Many banks that use electronic banking now offer sophisticated tools, including account aggregation, stock quotes, rate alerts and portfolio managing programs to help you manage all your assets more effectively (Vila et al., 2012).

Disadvantages of electronic banking include security; Majority of customers shy away from E-Banking services due to security concerns, human face: According to some analysts, customers still value personalized and responsive services from their bankers, ignorance: “on average 30% of bank customers do not know whether their banks provide online services” (Villa et al., 2013). According to Digital Literacy Fact Sheet (2015), computer illiteracy among majority of the population is still significantly high especially in Africa due to poor and/or lack of technological infrastructure and reliable power supply, lack of proper legislation governing e-transactions, Preference to paper money, as opposed to “virtual” cash in transactions.

Noor (2011), conducted a study on the impact of internet banking the performance of financial institutions, evidence from Jordan. This study is aimed to test the effect of internet banking services provided by banks on the internet on the profitability of these banks during the period 2000-2009. The study sample consists of all domestics banks in Jordan separated
into three groups: Non-internet service providers, recent adopters of the service, and early adopters of the service. Ratios are used to test the effect on profitability; these ratios are Return on Assets, Return on Equity Margin of Interest as profitability measures. Other ratios are used as independent variables, which are Market share, Overhead RATIO, Deposits/Assets, and Loan/Assets. Regression analysis is used to test the effect of internet banking services on the profit. The regression analysis showed that there is no significant effect of internet banking services on the profitability of recent adopter's banks in terms of ROA, and ROE. It gives an indicator of high expenses and cost associated with applying these services. The study centered largely on the impact of internet banking on bank profitability, but avoids examining the effect on customer experience and satisfaction.

Internet banking acts as a kind of financial intermediation which makes transaction through Internet (Ahanger, 2011). In the banking industry, Internet banking is the industry which uses computer technology to provide better services to customers and help in the development of banking practices (Ling, Fern, Boon, & Huat, 2016). Technological innovations are one of the effective ways to increase the level of service quality to satisfy customer needs. Through the advanced technology and innovation in the financial and banking sectors, Internet banking has become more familiar to the customers of traditional banks (Ahanger, 2011). Internet banking is offered by the retail banking in many developed countries and customers can make transactions without having to leave their homes or workplace (Timothy, 2012). In addition, Internet banking can help customers to manage their finances more efficiently (Ling et al., 2016). The existing literature, fails to highlight firsthand feedback by bank customers on the customer service experience that gain through adoption of the internet banking models.

2.3 Mobile Banking Strategy and Customer Service Delivery

Mobile banking focuses on the use of mobile devices to facilitate financial transactions between channels linked to the bank accounts by the mobile device platforms (Oliveira, Thomas, Baptista, & Campos, 2016). The full board execution process in mobile banking requires access to a really bank account which serves as the base through which the transactions are completed (Ramadhan, 2011). Mobile banking strategy is the most favorable approach in enhancing accessibility of financial resources considering that, a significant
portion of the modern population use mobile devices and specifically the smart phones. With a big chunk of the population using smart phones, presents an opportunity to the commercial banks to tap into the growing market (Alalwan et al., 2012).

2.3.1 Integrating Mobile Banking in Banking Operations

According to Al-Jabri & Sohail (2012), a mobile banking application is an internet-based platform that allows the bank client to access the banks servers remotely to effect a transaction. It is however important to note that the application will be unable to act as intended if it does not possess the ACID properties of the system. Vogels (2009) explains that ACID is an acronym for Atomicity, Consistency, Isolation, and Durability which are the core requirements of a system to function effectively. Vogels (2009) further notes that a banking system with all the properties operating smoothly ensures that a customer receives a high quality service. The smooth interaction between the mobile-based platform and the banking system ensures that a customer derives the same experience as having visited the bank.

Consumers expect mobile banking applications to integrate significant levels of operational flexibility and subsequent efficiencies. Atomicity is an important property that ensures that a customer gets either of the two responses when trying to carry out a transaction. Atomicity ensures that either the transaction is successful or not. As a result, atomicity safeguards the integrity of the whole banking network (Hilton, Christi, Dig, Moskal, Burckhardt & Tillmann, 2014). Since the mobile-based application will communicate with the banking system, it is important for atomicity to provide the customer with definite guarantees that the transaction will be successful. Besides atomicity, consistency is also an important attribute for the entire banking system.

Commercial services offered to bank customers ought to be available at all times in accordance to the customer’s convenience. Ariff, Yun, Zakuan, & Ismail (2013) describe availability as the capability of the banking network to operate as needed by the bank client. This means that banking system must be accessible to the customers at all time. The system must always be available for the service it offers to be rated as of high quality. This means that the mobile-based application user should gain access to the banking platform for
business at any given time. Availability is an integral aspect of mobile-based application since it enables the user to transact or communicate with their bank at any given time without any hindrances like network outage, slow data processing speeds, or yielding inaccurate information. The remote bank customer should be able to interact with the banking system in real time. As a result, the banking system must be robust enough to process large number of customers’ requests during peak periods without lagging or breaking down. Additionally, the platform should be responsive to customer queries and inputs. Yang, Yan, & Rountev (2013) pointed out that responsiveness is the capability of a banking platform to provide the user with an interface for imputing prompts, accept customer prompts, provide outputs, and generally complete the queries initiated by the user.

Access to financial services through utilization of technological platforms is subject to the adequate responsiveness and scalability. Highly responsive systems equates to a high service quality, as result responsiveness is an essential measure of service quality and by extension customer satisfaction. Nayebi, Desharnais, & Abran, (2012) explained that since users need highly responsive systems for quick and efficient transactions, banks have little choice but to meet the customer needs. For instance, when a user needs the banking application that is highly responsive and easy to use then it becomes critical for the mobile-based application to have such features that supports the customer needs. Ariff, Yun, Zakuan, & Ismail (2013) adds that both mobile based and bank based banking platforms should provide the user with smooth input and output experience.

2.3.2 The Structure of Mobile Banking Systems

Tchouassi (2012) sought to find out whether mobile phones really work to extend banking services to the unbanked using empirical lessons from selected sub-Saharan Africa countries. This study sought to discuss how mobile phones could be used to extend banking services to the unbanked, poor and vulnerable population. The study noted that poor, vulnerable and low-income households in Sub-Saharan Africa (SSA) countries often lacked access to bank accounts and faced high costs for conducting basic financial transactions. The mobile phone presented a great opportunity for the provision of financial services to the unbanked. In addition to technological and economic innovation, policy and regulatory
innovation was needed to make these services a reality. McGregor (2013) did a study titled Mobile banking: Increasing Access to Financial services. Her research analyzed how this technology helps unbanked and underbanked populations decrease financial risk and gain entry to more secure financial services. Both studies did little to expose the user experience derived in utilization of mobile banking innovations.

User online banking security as well as data confidentiality should be maintained at all times. Consequently, banks should ensure that they have put in place prudent data security measures to minimize breach of customer security or data loss. Kumar, Singh, & Jayanthi (2016) noted that banks face numerous data risks since hackers can easily breach the banking platform security and effect authorized transactions that can hurt the customer as well as injure the banks’ reputation. Security is also important for mobile-based application since banking institutions’ can use the platform to collect customer data for its own use. Kizzam (2015) pointed out that banks ends up having large volumes of information for its entire customers and such a scenario could be risky if the firm does not have in place prudent data handling measures. Firms should strive to keep all data safely since hackers or software security experts can exploit weak points in the system like infrastructure to gain unauthorized access to customer information in the banks domain.

While looking for a choice mobile application, customers will also look at the ease and flexibility provided by the application. Particularly, customers will are more likely to get satisfaction from an application that provides them with automatic updates about their accounts and financial progress. Other factors include availability of updates for the application, and a friendly user interface (Wasserman, 2010). Most often than not, customers will go for an application with a customizable user interface, which provides them with options to change the appearance of the interface, introduce or collapse navigations and tabs from a list of pre-defined alternatives (Carreño & Winbladh, 2013). Currently, software companies have developed technologies that can assist mobile application companies to develop these functions (Charland & Leroux, 2011). If correctly adopted and implemented in designing applications, would help them achieve an edge effect that guarantees customers satisfaction and a unique experience while handling their mobile applications.
Moreover, Kim & Wattanapongsakorn (2015) explained that all the mobile banking programs rely on hardware components and physical aspects of the network. As a result, it is imperative to take into consideration the physical infrastructure of the banking system to enhance security. Banking institution should therefore continually access the integrity of its banking system and carry out upgrades to secure the banking system from unauthorised access and to address lapses in security. However, given the amount of security risks involved, banking institutions should use new and advanced technologies when upgrading its software and hardware components. According to Dean (2010), firms with banking firms with outdated software should carry out full upgrades of the system to enhance security of their banking operations. Kizza (2015) further observes that the designs of the banking system matters a lot and suggests that banks should adopt system design that enhances security of all its mobile based and banked operations.

2.3.3 The Scope of Mobile Banking

The primary intention of commercial banks introduction of mobile banking services is to enhance the level of customer satisfaction (Jarollahi, 2013). Al-Jabri & Sohail (2012) explains that banking services should provide fast and efficient services to customers to promote customer satisfaction with the mobile based banking applications. Efficient banking applications provide added services like support and touch to access services. Ballard (2007) observes that the appropriate choice of mobile application for banks should allow customers to easily access the banking system as well have access to bank support services when stuck or unsure. Ballard (2007) further observes that customers have preferences for mobile applications that directly connect them with the desired service rather than redirect the customer to other sites. Dean (2010) also reiterates that excellent mobile banking applications should provide a user-friendly interface that is easy to navigate. Applications that are easy to navigate are popular with bank clients since it saves them time. Banks also benefits from such applications since it promotes customer satisfaction as well as enhances their banking operations.

For banking institutions to achieve customer satisfaction, Dzogbenuku (2013) points out that banks should deliberately assist customers to manage their finances. The move is strategic as
it helps customers understand how they use their finances over a period, get a better view of the bank’s terms and conditions, and enable customers gauge their financial wellbeing. Eshet-Alkalai & Chajut (2010) argues the best way to make it easier for the firms to understand their financial literacy is by developing mobile banking applications with financial analysis capabilities. According to Hilton et al. (2014), customers will appreciate the extra service and can boost their loyalty to the bank brand since they will feel the institution is transparent and trustworthy with their funds. It will be even better for the customer if the financial analysis tool in the banking application displays its data in form of graphs and charts for an added customer experience.

According to Fiserv (2013) adoption of mobile banking service by financial institutions has far-reaching effects in many aspects. Mobile banking service adoption has the potential of greatly improving the level of service delivery in any financial institution. This happens because of the short time it takes a customer to complete a transaction using a mobile phone than walking to the bank to have the payment affected. This improvement in service delivery due to adoption of mobile banking has the potential of capturing approximately 20% online customers who prefer better service delivery through mobile banking. An increase in the number of customers is also likely to lead to higher revenues and increased profits for the bank. However, there are concerns from customers that although service delivery greatly improves with adoption of mobile banking, security of mobile banking service remains a challenge that needs to be addressed in order to enhance service delivery.

A study carried out by Adewoye (2013) impact of mobile banking on service delivery in the Nigerian commercial banks reveals that mobile banking improves banks’ service delivery in many ways such as transactional convenience, saving of time, quick transaction alert and save of service cost which has recuperate customer’s relationship and satisfaction. The study recommends that the management of commercial banks should create awareness to inform the public about the benefits derived on the mobile banking service. Collaboration among banks should perfectly maintain, skilled work force and computer wizard should be employed by every bank in order to prevent fraudulent personnel and hackers from manipulating the banks’ data and stealing money from the banks’ accounts. Kizza (2015) submitted that that security of the mobile banking transactions was central to instilling value
to the customers for using these platforms. The studies by Adewoye (2013) and Kizza (2015) were undertaken in different contexts, without determined inference thus limited in application.

2.4 Electronic Payments Strategy on Customer Service Delivery
Electronic payments strategy is regarded as the foremost disruptive initiative that contributed to the emergence of the cashless economies. The advent of electronic payments paved way for the introduction of smarter models through which bank customers can access their money electronically by the use of mechanisms such as credit and debit cards (Kaur, 2017). Electronic payments utilize the electronic digital concept of electromagnetic cards or chips that are loaded with customers information details linked to their actual bank accounts (Roozbahani, Hojjati & Azad, 2015). These cards have replaced the need for people to carry cash around to facilitate electronic transactions. The use of credit and debit cards has been attributed to the emergence of the term, ‘plastic money’ that is a way of replacing bundles of cash with simple cards (Vyas, 2012).

The electronic payments contributed to the worldwide interconnection amongst bank customers through the electronic cards thanks to the global partnerships such as the integration of payments models through platforms such as Visa and Master Card. Access to global cash payments mechanisms, make it possible for bank customers make payments anywhere across the globe depending on whether their bank issued credit or debit cards are interlinked with the global cash platforms (Jarollahi, 2013). Credit and debit cards have empowered the commercial bank customers make payments anywhere they are, whether in gas stations, in supermarkets, in restaurants etc. so long as they have money in the bank accounts for the credit cards or deposited cash for enough cash for the debit cards (Abili & Jafarnejal, 2014).

2.4.1 The Electronic Payments Strategy by Commercial Banks
According to Lazo and Casu (2017), the introduction and use of electronic payment instruments holds the promise of broad benefit to both commercial banks and consumers in the form of reduced costs, greater convenience and more secure, reliable means of payment and settlement for a potentially vast range of goods and services offered worldwide over the internet or other electronic networks. As stated by Worku (2010) e-payment and e-banking applications represent a security challenge as they highly depend on critical ICT systems that create vulnerabilities in financial institutions, businesses and potentially harm customers. Interoperability plays an important role in the electronic payments and refers to the ability of different systems and sometimes-different products to seamlessly interact or exchange data.

Lazo and Casu (2017) examined the Moldova Governmental e-Payment Gateway (M-Pay) platform that facilitated the electronic payments for the citizens seeking access to government services. The M-Pay service was designed to re-use all relevant governmental platforms, including the interoperability platform, meant to ease the development of the current service, to lower the investment costs and to ensure its sustainability. Complete the electronics payments system was made possible by the Moldova Government Interoperability Platform (M-Connect), which formed the infrastructure enabling the transactions.

To facilitate the payment systems strategy, the scope of interoperability depends not only on the technical ability of active platforms to interact but also the contractual relationships between the entities wanting to interact. HIMSS (2013) submitted that interoperability highlights the scope to which systems and devices can share data, and interpret that shared data. For two systems to be interoperable, they must be able to exchange data and subsequently present that data such that it can be understood by a user.

The Electronic Government Center (EGC) data from the end of 2016 reveals that through M-Connect 60 integration projects to facilitate data exchange between 24 authorities were undertaken (EGC, 2017). M-Connect serving as the core of the process for re-engineering the Republic of Moldova’s public services, enabling the streamlined delivery of public services - both for citizens and businesses - as well as the optimization of internal governmental business process (WSO2, 2017). Reverting to the M-Pay case, the agreements and contracts between the public authorities, the M-Pay owner, and the payments operators, clearly
stipulates the provisions on ensuring a quality level of the service on this segment, including provisions regarding its availability and security. According to The World Bank (2016), interoperability is no longer limited by national borders and the overall ecosystem has become more complex. A lack of interoperability can result in inefficiencies due to overlapping or limited coverage and sunken investment costs, which can negatively impact adoption and usage.

2.4.2 Electronic Payments and Transactions Using Electronic Funds Transfer

The most common models of electronic payments include the use of credit and debit cards to facilitate instant transactions amongst the users (AlHaliq & AlMuhirat, 2016). Besides making payments using the cards other electronic payment models exist such as the Electronic Fund Transfer (EFT) model. Juma (2013) postulated that an electronic fund transfer is any sale, withdrawal, transfer of moneys between accounts, and payment initiatives performed electronically. A banking customer, for instance, can make an electronic fund transfer when she deposits a pay cheque. Similarly, a business owner can make an EFT when she withdraws a cash advance from an automatic teller machine to fund discretionary business expenses (Karanja, 2017).

In order for an EFT be completed, a complex suite of communications must take place between the merchant or business and the issuer's account (Avital, Hedman, Albinisson & Design, 2017). If a credit card machine is offline, for instance, a customer may still make a delayed electronic fund transfer via a process known as the preauthorization. In this situation, a merchant first vets the banking card via fraud lists and other methods and then debits the account. Later, when the merchant hooks up to an online system, he can finish the transaction via a process known as settlement (Nadig & Anusha, 2017).

Some banking watchdogs have raised concerns over the security of electronic fund transfer mechanisms (Juma, 2013). Making an EFT banking transfer on an unsecured line, for instance, can lead to the dispensation of critical personal information or banking account data to unrecognized or inappropriate third parties. Fraud and unethical conduct seems to be running rampant throughout the corporate world (Mapharing & Basuhi, 2017). A recent
survey in South Africa estimated that white-collar crime is costing the country R80 billion a year.

Mapharing and Basuhi (2017) submitted that EFT requires highly efficient controls built into the systems, and the process must be controlled both at the sender and recipient sides. Controls need to exist at the intermediary stages wherever information is passed, stored or processed (Nadig & Anusha, 2017). Any unauthorized alteration of data (fraud) or even a data input error produces (if not immediately detected or corrected) an alteration of a customer's account balances; hence, preventing unauthorized alteration is vital for these systems. By simply altering payment instructions such as bank account details or payment amounts, employees with access to EFT systems can and do steal very large sums of money (Juma, 2013).

2.4.3 Scope of Electronic Payments

Juma (2013), postulated that the use of computer technology is a significant factor in the commission of fraud and one of the common electronic frauds is the misuse of electronic funds transfer (EFT). Globally, transactions on EFT systems are subject to high risk and exposure to fraudulent activities (Vyas, 2012). Financial gain is one of the key motivations behind frauds, other than the desire to master the EFT process, the thrill of the deed, intellectual challenge and employee revenge. The simplicity of modifying a basic text file to obtain large payments is an inducement to commit fraud. By fraudulent alteration of EFT, an individual could steal large sums of money.

Indeed, the computerized nature of modern EFT banking has made it difficult for even veteran banking account patrols to identify and stop certain types of fraud (Abili & Jafarnejal, 2014). This is not to say that using EFT banking initiatives is not safe; however, the smart banking customer examines her reports regularly to look for inaccuracies. EFTs are a more secure and efficient means of transferring money than, for example, cheques, which are easily lost, stolen and/or altered. However, for EFTs to be effective, the proper controls need to be in place (Bernal, 2017). Many users of EFT systems simply do not understand how such systems operate or the risks to which they are exposed (Juma, 2013). They will simply assume that the system they have been given by a bank is a good one without
appreciating that the system may have weaknesses or that it is only as secure as the people who operate it are trustworthy.

As indicated by Wisdom (2012) the quick changes in business operations in contemporary times as innovative change oblige banks in Ghana to serve their clients electronically. Customarily, banks have been in the cutting edge of saddling innovation to enhance their items and administrations. The keeping money industry and its surroundings in the 21st century is exceptionally perplexing and focused and in this way the requirement for data and correspondence innovation to take focal point of the audience in the operations of banks (Offei & Nuamah-Gyambr, 2016). The approach of current innovation, for example, web utilization is growing quick and is continually conveying new measurements to our day by day life. The saving money industry is one of the areas that has profited from the advancing innovation by the presentation of Electronic managing an account (Electronic banking) frameworks that give simple access to saving money administrations. Studies by both Offei and Nuamah-Gyambr (2016), and Wisdom (2012), highlight the importance and benefits of innovations in electronic payments but fail to demonstrate the precise benefits customers accrue in terms of user experience.

2.5 Automated Cash Machines Distribution Strategy and Customer Service Delivery
The advent of technological revolution within the commercial banks in the past three decades focused on introduction of interventions such as the cash counting machines that contributed to the improvement in service delivery speeds within the bank counters (Hazlina et al., 2011). The automated cash machines encompass an array of electronic machines and devices that have been central to the automation of financial services within and external to the commercial banks (Nyoni & Bonga, 2017; Vinkirk et al., 2012). The electronic devices and machines came into use decades ago. In advanced economies largely on the western world, adopted the use of electronic machines decades ago (Mandal, 2013).

The use of electronic cash machines and devices has centrally contributed to faster execution of commercial bank operations such as the simple activities of counting money (Vinkirk et al., 2012). Traditionally banks use higher levels of validation, authentication and process execution. Adoption of electronic procedures in the delivery of financial services, contributed
to enhanced levels of authentication and validation (Domeher, Frimpong & Appiah, 2014). The use of systems such as Automated Teller Machines (ATM) comprised of authentication and validation procedure, which must be completed for users to access the cash (Kaur, 2017). Additionally, other automated cash machines such as the process data machines (PDQ) require users to execute an authentication process, through keying in the user password for the credit cards and proceed to make payments.

The use of electronic devices such as the PDQ machines, cash counting machines and the ATM’s have resulted in the actual automation of the financial transactions in banks that enables facilitation of easier electronic procedures in facilitating money processes (Domeher et al., 2014; Mandal, 2013). Cash processes automation is a commendable prospect as it makes it possible for accomplishments of many processes in a shorter time. Enabling bank customers access their cash via the ATM’s eliminates the need for the bank customers to queue in bank halls to make simple transactions like withdraw or deposit, reducing internal bank workload and subsequently enhancing easy financial access (Salihu, Mustapha, Ajayi & Binitie, 2013). Evidently, faster transactions make it possible for the users to benefit significantly with time convenience and increased efficiencies (Bonga, 2016).

2.5.1 Automation of Banking Transactions

Across plethora of economic sectors, automation has been viewed as the most valuable strategy in facilitating enhancement of service delivery through increased levels of efficiency (Mandal, 2013; Ongori, 2013). Automation in the financial sector was especially valuable in hastening the financial sector processes. Evidence from the western world indicate that, upon the introduction of machines in the banking sector, more financial tasks were being completed in a faster and more efficient way (Dymski, 2016; Hazlina et al., 2011). With machines performing basic tasks, of which previously were executed manually, contributed to a reduction of the actual work load performed by first line employees (Odior & Banuso, 2012). Subsequently, reduced workload contributes to reduced operational tasks and an equal reduction in costing for functions related to manual tasks, which in turn meant a reduction in the overall cost of operation.
Automation of any operation within a giant industry like the financial sector has in some quarters blamed in contributing to job losses (Peters & Panayi, 2016). This perspective is supported by the primary assumption that when machines are introduced to do jobs that were previously performed manually, will definitely result in job loss for the particular employees who undertook this particular jobs. In the banking sector, introduction of electronic devices that contributed to the automation of the bank services significantly aided in enhancing the levels of efficiency and speed in execution of financial tasks (Chorafas, Steinmann & Steinmann, 2016). This argument negates the perspective of job losses, since the adoption of automation does in fact result in improved efficiency levels among staff.

The advent of technological changes within the commercial banks, contributed in benefitting both the commercial banks and the customers as positive changes were felt on both sides of the coin (Vankirk et al., 2012). The customers were guaranteed faster bank services and increased level of efficiencies. Bank customers, have been the beneficiaries in the automation considering the increased banking competition, which meant that every bank was rushing to be ahead of the pack in enhancing the customer experience (Dymski, 2016). A study by Domeher et al. (2014) focusing on banking innovations on the Ghanaian financial industry, revealed that increased market competition was significantly beneficial for the customers as more prospective, unique and enticing products and services were being introduced constantly as a strategy to woo customers.

A study by Nyoni and Bonga (2017) used an exploratory approach to evaluate the impact of cashless transactions on the performance of the financial sector. The study found that before the introduction of technological changes that resulted in the automation of the banking services, the customers must be well informed in well-structured financial education programs to enhance the probability of efficacy in financial services. Mandal (2013) argued that, the bank customers needed to be educated on new technologies that are being introduced for them to understand the existing technical elements that may be confusing but equally very important. In addition, Mandal (ibid) presents the perspective that bank customers are better off in using the automated services when they understand the implications these machines come with, for instance the security aspect. The study by Nyoni and Bonga (2017) clearly demonstrates the roles of technology introduction in promotion of
cashless economy through ensuring bank customers are well educated. The study fails to highlight the effects of this cashless economy on the aspect of customer service delivery. Furthermore, the study was carried out in Zimbabwe whose economic structure was highly volatile due to high inflation rates, hence less likely to offer a clear picture of the financial sector, which limits the likelihood of making inference for a different context.

2.5.2 The Structure of Automated Cash Machines

Numerous electronic machines are in service within the financial industry across the globe. According to Vinkirk et al. (2012) the designs for cash machines put critical emphasis on the aspects of ease of use, security and scalability. Global studies on the effective adoption and integration of technological changes were largely dependent on the ability to convince users to accept this technology. This perspective was central to the emergence of the Technology Acceptance Model (TAM), which addressed success in new technologies as the subset of user’s acceptance (Marangunić & Granić, 2015). User awareness is highly critical in facilitating effective and seamless adoption of technological platforms that are aimed at altering the normal processes and procedures that the users were accustomed to.

A study by Chorafas et al. (2015) used an experimental approach to assess the integration of expert systems in the commercial banks operations. The primary focus of this study sought to examine how the bank executives felt about accommodating technology tools that aided in the decision-making processes. Findings, suggested that perceived value of this automation was central in convincing managers to embrace technological changes. Ongori (2013) agree that technological systems used in commercial banks will only be welcome if they offer premium value to the running of the organization processes. According to Bonga (2016), high value accrued from adopting new technologies accelerated the likelihood of such a system being endorsed to undertake critical duties. The studies by Bonga (2016), Chorafas et al. (2015) and Ongori (2013) failed to demonstrate the aspect of customer preferences in facilitating the adoption of technological platforms that result in automation of operations within commercial bank services.

A study by Kaur (2017) examined the adoption of demonetization strategy by commercial banks through adoption of technological systems on the advancement if cashless economic
model. The study found that the underlying priority in the adoption of the new technological change was informed by the perceived learning curve amongst the target users. Akman and Mishra (2015) submitted similar views, when they examined the influence of TAM in green ICT initiatives, where the user’s perception on the importance and ease of use for technological systems formed the basis for the system adoption. The studies by Akman and Mishra (2015), and Kaur (2017) show consistence on the importance of user’s dimension on the adoption of the technological innovations however failed to link the perspective of user’s embracement of these technologies and the equal impact on customer service delivery in the banking sector.

2.5.3 Automated Machines on the Banking Services

Advent of financial sector automation came with huge consequences both positive and negative. According to studies conducted by Hazlina et al. (2011), Nti et al. (2017), Ongori (2013) demonstrated an array of outcomes that can be attributed to significant changes in the execution of procedures within the financial sector. The aforementioned positives which can be drawn from examination on the positives gained by the introduction of technological changes include; improved levels of speed in undertaking basic tasks within the banks, increased levels of efficiency, enhanced levels of work productivity and open channels for monitoring, supervision and feedback. Vankirk et al. (2012) observed that automation of financial operations was only deemed successful with the integration of high security features.

A study by Mandal (2013) examined the ATM’s security features, focusing on the underlying accreditation level and password verification. The study found that, integrating multi-tier level of accreditation, such as multiple levels of password verification enhanced the levels of overall security feature. However, increased tiers of verification, comes with the baggage of requiring the users memorize a number of passwords, which could be a momentous task. Domeher et al. (2014) warns on the importance of simplifying user-centric technologies. This indicates that, there exist underlying challenges, which require the user’s data and finances be protected, but also such protection should be simplified in order to accommodate all the kind of users. Both studies by Domeher et al. (2014) and Mandal (2013) fail to highlight the
models that institutions can best presented as highly secure and equally user friendly within the financial sector.

A study by Nti et al. (2017) examined the underlying security risks that commercial bank customers are exposed to as they use the automated systems such as the ATM’s. The study revealed, that presently high numbers of commercial bank customers are less informed of the risks that come with tech systems. Demeher et al. (2014) on the other hand used logistical regression to examine penetration of financial innovation within the financial sector and consequently revealed gap in user awareness on the security risks that are linked to the utilization of these technological systems. The studies however fail to demonstrate as to whether the users are concerned about the security of their finances when using these technological systems and this meant for the overall levels of customer service delivery.

2.6 Summary
This section of the study reviewed the existing literature on the effect of technology integration strategy on the customer service delivery. The components of technology integration examined include; a study on the influence of internet banking strategy, mobile banking strategy, electronic payments programs and automated cash machines programs on customer service delivery. The next section is chapter three, which reviews the research methodology that will be adopted in this study.
CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

The section of the study discusses the methodology used to carry out the study as well as how data was analyzed. The chapter is divided into subtopics dealing with population and sampling approach, data collection procedures, data analysis methods. The part also explains how the findings of the study are presented.

3.2 Research Design

Coopers and Schindler (2014) described research design as a map that explains the criteria used to collect, measure, and analyze data. The present study adopted the descriptive research approach. Descriptive research plan allows the researcher to collect appropriate data for the study while the subject is in its natural setting. Yin (2013) assessed that descriptive research design enabled evaluation of occurrence within its real-life situation and that the researcher is at liberty to utilize several methods of data collection to promote completeness of data. The researcher found descriptive design an appropriate method for this study as it enabled an in-depth description and understanding the effect of technology integration strategy on customer service delivery at Barclays Bank of Kenya. This approach focused on the technology integration strategy at Barclays Bank of Kenya, which is a financial institution. The study design also enable the researcher to gain a deeper understanding of the technologies and processes deployed by the subject institution.

3.3 Population and Sampling Design

3.3.1 Population

Coopers and Schindler (2014) submitted that a population encompasses a total number of study subjects that qualify to be studied and that percentage of the population can be studied if the population is too large. The target population of this study encompassed the Barclays Bank of Kenya (BBK) staff working at the bank headquarters. The total number of ICT
employees directly involved in the implementation of the technology integration strategy together with the support staff is 201 employees (BBK, 2017).

3.3.2 Sampling Design

Bell (1999) describes a sample is a sub class of the population and possess similar traits as the target population of the study. Since the population was too large to be studied as a whole a portion of the population was earmarked to be studied. The investigator took sufficient care to ensure that the sample chosen was a representative of the population. The researcher chose the sample size using the procedure described in subsequent sections.

The researcher used Krejcie and Morgan concept to come up with an appropriate sample size from a population of 201. As explained by Cooper and Schindler (2014), the census method involves obtaining and recording information on the population or sample under study. Budget constraints made it impossible to study the whole population of ICT staff of Barclays bank hence a sample was selected using a sampling frame.

3.3.2.1 Sampling frame

In effort to facilitate effective field survey exercise, sampling frame was utilized in the determination of the sampling units. Cooper and Schindler (2014) argued that a sampling frame is a list of elements from which sample is actually drawn and is closely related to the population. The target population of this study comprised of the ICT staff working at the Barclays bank HQ, based in Wetlands Region, Nairobi County. These ICT employees are deployed across different departments within the organizational structure. These departments include; Corporate affairs, IT division, Credit department, procurement, logistics, S & L department, Investments division, human resources and finance. This list of all the departments that are integrated in the ICT strategy was obtained from the ICT department, which is responsible for the overall implementation of the strategy at BBK.

3.3.2.2 Sampling Technique

The study adopted a non-probability sampling approach to target the most available group of ICT officers in Barclays bank based in Nairobi, wetlands region. Molenberghs (2013)
defined a sampling procedure as a method of selecting apportion of the population for investigation of a phenomena under study

The affirmed sample determination in this study was through Krejcie and Morgan 12070 formula illustrated below.

\[ s = \frac{X^2NP(1-P)}{(ME^2(N-1) + X^2P(1-P))} \]

Where:

\( s = \) Sample size

\( X^2 = \) Chi-Square for the specified confidence level (3.841) at 1 degree level of freedom

\( N = \) Population Size

\( P = \) Population proportion (assumed to be .50 since this would provide the maximum sample size)

\( ME = \) desired margin of Error (Expressed as a proportion). Also denoted as \( d^2 \), is the degree of accuracy (.05)

Substituting ME2 with \( d^2 \); Krejcie and Morgan Formula changes to:-

\[ s=X^2NP(1-P)/d^2(N-1) + X^2P(1-P) \]

### 3.3.2.3 Sample Size

Blumberg, (2014) noted that samples sizes represented the populations and as such any findings from the study should be generalizable to the population. Barbie (2010) submits that a sample can size refers to the respondents involved in the study. The unique characteristics of the population can assist the investigator come up with an appropriate study sample. As a result, the researcher should understand all the aspects of the population. To avoid using the
rule of thumb when determining the sample size, the investigator used Krejcie and Morgan model as explained in the equation below.

Substituting for the values as given in Krejcie and Morgan, (1970) recommended in the above research technique section, given a population, \( N = 201 \):

\[
s = \frac{3.841 \times 201 + 0.50 \times (1 - 0.50)}{0.052 \times (201 - 1) + 3.841 \times 0.5 \times (1 - 0.5)}
\]

\( s = 132 \)

Using the Krejcie and Morgan approach from a population of 201, 132 respondents was the sample size for this research project; 132 respondents represented nearly 80% of the target population.

The respondents were distributed as shown in the table 3.1 below.

<table>
<thead>
<tr>
<th>Department</th>
<th>Population, N</th>
<th>Sample size, s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate affairs</td>
<td>96</td>
<td>65</td>
</tr>
<tr>
<td>Investments</td>
<td>38</td>
<td>23</td>
</tr>
<tr>
<td>Human resources</td>
<td>21</td>
<td>14</td>
</tr>
<tr>
<td>IT Department</td>
<td>28</td>
<td>17</td>
</tr>
<tr>
<td>Credit department</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Procurement</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Logistics</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>S &amp; L department</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Finance</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>201</strong></td>
<td><strong>132</strong></td>
</tr>
</tbody>
</table>

3.4 Data Collection Method

The researcher used structured questionnaires to collect data from the sample population for the study. Since data collection is crucial for any research study, the researcher based the tool on the research objectives and used a five point likert scale to eliminate bias.
The questionnaire focused on gathering the views on the effect of technology integration strategy on the customer service delivery. Ideally, the primary data was provided through the questionnaires directed to respondents. According to Lietz (2010), a questionnaire is a set or sequence of questions developed to obtain information upon an area of interest, from an informant. Each respondent was requested to answer similar set of questions in a preset order. Each section had a balance of close ended and open-ended questions. The first section sought respondent background information, which covered the respondent’s demography. Subsequent sections covered questions centred on the technology integration variables, notably internet banking, mobile banking, electronic banking and automated cash machines.

3.5 Research Procedures
The researcher developed the questionnaires from the study objectives. The data collection instruments were subjected to rigorous procedures to test it validity and reliability. Statistical tools and peer reviews was used to gauge the integrity of the instrument

Validity and reliability was tested using the Cronbach alpha technique, where computed alpha values of above 0.7 indicated that the questionnaire was a valid tool for data collection (Cooper & Schindler, 2014). Bryman and Bell (2011) determined reliability using a rule of thumb principle the study should not be lower than 0.7 if the researcher used Cronbach’s Alpha approach. Concerning validity, the researcher determined the authenticity and integrity of the study using the study instruments like questionnaires. It was appropriate to structure the questionnaires to cover all the study objectives. The researcher also used peer-review methods where the study instruments were submitted to peers to for their input and advice to reduce bias and promote integrity.

The researcher sought consent from the university prior to the research. The researcher also sought for permission from the bank corporate affairs department in this case Barclays Bank of Kenya, to carry out the study within their premises. The researcher collected the data personally, by use of the ‘drop and pick method’ all through the study period. In the instances of slow response, the researcher kept track and made follow-ups on the fully completed questionnaires.
3.6 Data Analysis Methods
According to Cooper and Schindler (2014) a researcher can use appropriate methods to evaluate the data collected from the respondents and further summarize the data using statistical tools. The move ensures that the researcher is able to detect trends and patterns in the data sufficient to answer the research questions. Before data analysis commenced, went over the data to ensure that they were complete and devoid of errors. Since the researcher sought to minimize bias, in appropriate instances some of respondents were contacted via mobile phone for clarification if any of the information provided were incomplete. The levels of measurement suitable for data analysis were ordinal and nominal scale measurements. Data was then analyzed using statistical package for social sciences (SPSS) computer software.

Data collected was analyzed through SPSS using both descriptive and inferential statistics. Descriptive statistical analysis included the measures of central tendency and spread or dispersion. Measures of central tendency provided the information on the closeness of the data collected to the centre of the distribution, for each continuous variable. This included mean, mode and median. Measures of spread indicate how the overall data is spread out from the lowest to the highest. This was computed using range, variance and standard deviation. Inferential statistical analysis included confidence interval and hypothesis testing in order to make valid conclusions from the data. This was done through correlation and regression tests, which were evaluated for the association between the independent and dependent variables, and assessed whether, independent variables, notably; internet banking, mobile banking, electronic payments and automated cash payments, predicted the outcome of dependent variable, which is the customer service.

3.7 Chapter Summary
This chapter included the research design and the sample size and sampling design that was used. It also outlines the data collection method, which was the primary data, and the data analysis techniques used. The next section is chapter four, which covers the results and findings.
CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction
This chapter covers the analysis, presentation and interpretation of the data as gathered from the field survey. The main purpose of this study was to evaluate the effect of technology integration on customer service delivery within commercial banks. The study examined numerous technological initiatives implemented by the Barclays bank of Kenya in effort to enhance customer service delivery.

4.2 Response Rate
The data computed in Table 4.1, shows the feedback in terms of response rate aggregated using frequencies and percentages.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responded</td>
<td>94</td>
<td>71.2%</td>
</tr>
<tr>
<td>Non-response</td>
<td>38</td>
<td>28.8%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>132</td>
<td>100%</td>
</tr>
</tbody>
</table>

The findings in Table 4.1, highlights the feedback from the field survey where 94 questionnaires were successfully returned which represents about 71.8% response rate. Further, 37, which compute to 28.8% response rate, questionnaires were not availed in time for data analysis process. The response rate of 71.2% is sufficient to carry out a comprehensive data analysis exercise that will be representative of the population under study. According to Barbie (2010) a response rate of 60% is sufficient to offers a valid foundation for analysis of field survey results. Furthermore, Cooper and Schindler (2014), observed that a response rate of 70% is sufficient to offer a strong basis for conducting data analysis process.

4.3 Demographic Distribution
The demographic distribution covers the respondent’s demarcation in terms of age distribution, education level, department attached and work experience.

4.3.1 Age Distribution
The data computed in Table 4.2, highlights the distribution of respondents by age.

**Table 4.2 Distribution of respondents by Age**

<table>
<thead>
<tr>
<th>Distribution</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 - 30 years</td>
<td>16</td>
<td>16.9 %</td>
</tr>
<tr>
<td>31 - 35 years</td>
<td>19</td>
<td>20.5 %</td>
</tr>
<tr>
<td>36 - 40 years</td>
<td>20</td>
<td>21.7 %</td>
</tr>
<tr>
<td>41 - 45 years</td>
<td>23</td>
<td>24.1 %</td>
</tr>
<tr>
<td>Over 46 years</td>
<td>16</td>
<td>16.9 %</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>94</strong></td>
<td><strong>100.0 %</strong></td>
</tr>
</tbody>
</table>

The findings in Table 4.2 show that majority of the respondents, 24.1% (23) indicates that they were in the age group, 41 – 45 years. The findings show that, 21.7% (20) of the respondents were in the age group 36 – 40 years. Further, 20.5% (19) of the respondents were in the age group, 31 – 35 years. The study shows that a tie of 16.9% (16) among the respondents, indicated to be in the age group, 18 – 30 years and that over 46 years. The study makes findings that there exists comprehensive diversity in age distribution within Barclays bank of Kenya. This imply that there exists diverse age distribution, with good mix of new staff and experienced personnel who are able to offer good apprenticeship to enable the bank continue offering good customer services in the long term.

4.3.2 Education Level

The computations in Table 4.3 highlight the respondent’s distribution in accordance to their academic qualification.

**Table 4.3 Distribution of respondents by Education Level**

<table>
<thead>
<tr>
<th>Education level</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diploma</td>
<td>28</td>
<td>30.1 %</td>
</tr>
<tr>
<td>Degree</td>
<td>41</td>
<td>43.4 %</td>
</tr>
<tr>
<td>Masters/Post-graduate Diploma</td>
<td>14</td>
<td>14.5 %</td>
</tr>
<tr>
<td>PhD</td>
<td>11</td>
<td>12.0 %</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>94</strong></td>
<td><strong>100.0 %</strong></td>
</tr>
</tbody>
</table>

The findings presented in Table 4.3, show that majority of the respondents, 43.4% (41) have attained a University Degree. The findings show that, 30.1% (28) of the respondents attained
a Diploma. Further, the findings show that, 14.5% of the respondents attained a Masters Degree. The findings also show that, 12% (11) of the respondents attained a PhD. The study makes a finding that, employees at the Barclays bank of Kenya have attained a high academic qualification. These findings imply that, good academic qualification is necessary to enhance the prospects of commercial banks effectively undertaking integration programs for the technology systems aimed at improving customer service delivery.

4.3.3 Department at the Bank

The computed data in Table 4.4 highlights the distribution of respondents in terms of the department they are attached.

Table 4.4 Distribution of respondents by Department attached

<table>
<thead>
<tr>
<th>Departments</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investments</td>
<td>23</td>
<td>24.1%</td>
</tr>
<tr>
<td>Human Resources Division</td>
<td>11</td>
<td>12.0%</td>
</tr>
<tr>
<td>IT Division</td>
<td>16</td>
<td>16.9%</td>
</tr>
<tr>
<td>Credit Department</td>
<td>11</td>
<td>12.0%</td>
</tr>
<tr>
<td>Procurement department</td>
<td>9</td>
<td>9.6%</td>
</tr>
<tr>
<td>Logistics Division</td>
<td>10</td>
<td>10.8%</td>
</tr>
<tr>
<td>S &amp; L Department</td>
<td>9</td>
<td>9.6%</td>
</tr>
<tr>
<td>Finance Division</td>
<td>5</td>
<td>4.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>94</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

The findings presented in Table 4.4 show that majority of the respondents, 24.1% (23), worked at the investments department. The findings also show that, 16.9% (16) of the respondents were in the IT department, 12.0 % (11) were in the credit department, 12.0% (11) were in the HR department and 10.8% (10) were based in the logistics department. Further, the findings indicate that, 9.6% (9) of the respondents were in the procurement department, 9.6% (9) of the respondents were in the S & L department and finally 4.8% (5) of the respondents were in the finance department. The findings indicate that the respondents were derived from numerous departments. This also aids in ensuring that information derived from this study is inclusive of all the departments of the bank. This departments are integrated with advanced technological systems to enable enhanced delivery of service to bank customers.
4.3.4 Job Experience

The data computed in Table 4.5 highlights the distribution of respondents in terms of job experience at the Barclays Bank of Kenya.

Table 4.5 Distribution of respondents by job experience

<table>
<thead>
<tr>
<th>Job Experience</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 5 years</td>
<td>31</td>
<td>32.5%</td>
</tr>
<tr>
<td>6 - 10 years</td>
<td>36</td>
<td>38.6%</td>
</tr>
<tr>
<td>11 - 15 years</td>
<td>17</td>
<td>18.1%</td>
</tr>
<tr>
<td>16 - 20 years</td>
<td>7</td>
<td>7.2%</td>
</tr>
<tr>
<td>Over 20 years</td>
<td>3</td>
<td>3.6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>94</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

The findings presented in Table 4.5 indicates that majority of the respondents, 38.6% (36) had a work experience of 6 – 10 years. The findings also indicate that, 32.5% (31) of the respondents had a working experience of below 5 years. The results also show that, 18.1% (17) of the respondents had a working experience of 11 – 15 years, whereas 7.2% (7) indicated to have a working experience of 16 – 20 years. Finally the results show that, 3.6% (3) of the respondents had attained a working experience of over 20 years. The findings show that, a substantial number of employees at Barclays Bank of Kenya have a good work experience. This implies that good work experience is a vital aspect in ensuring effective knowledge of how technology integration has can have an impact on customer service delivery.

4.4 Internet Banking Strategy on Customer Service Delivery

The study sought to evaluate the effect of internet banking systems on the customer service delivery within the Barclays Bank of Kenya. The data computed in Table 4.6 highlights the response on internet banking factors measured in Means and Standard Deviation (SD).

Table 4.6 Internet banking strategy factors Mean and Standard Deviation

<table>
<thead>
<tr>
<th>Internet banking Factors</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet banking strategy simplifies delivery of banking services to bank customers.</td>
<td>4.41</td>
<td>.716</td>
</tr>
</tbody>
</table>
The integration of internet banking strategy creates and expands the service delivery channels where bank customers can make inquiries related to bank services.

<table>
<thead>
<tr>
<th>Description</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integration of internet banking programs enables the bank to simplify online cash transactions.</td>
<td>4.41</td>
<td>0.625</td>
</tr>
<tr>
<td>Internet banking strategy enables access to banking services from a remote location.</td>
<td>4.27</td>
<td>0.607</td>
</tr>
<tr>
<td>Internet banking services are easy to track and trace hence boosting bank customer’s confidence on banking services.</td>
<td>3.80</td>
<td>0.960</td>
</tr>
<tr>
<td>Internet banking strategy enables access to bank services such as online transactions in a faster way.</td>
<td>4.17</td>
<td>0.762</td>
</tr>
<tr>
<td>The interconnections of telecommunication infrastructure that support internet banking strategy enhance security of the internet banking transactions enhancing security of bank services.</td>
<td>4.31</td>
<td>0.603</td>
</tr>
<tr>
<td>Access to internet banking, reduces the operational costs for the banks enabling more investments in enhancing user experience in accessing banking services.</td>
<td>4.22</td>
<td>0.682</td>
</tr>
<tr>
<td>Internet banking strategy has expanded the customer base as more customers can easily apply for bank accounts through the internet platforms.</td>
<td>4.29</td>
<td>0.615</td>
</tr>
<tr>
<td>Internet banking strategy enables commercial banks process customer profiles easily which helps in faster processing of loans and credit applications.</td>
<td>3.75</td>
<td>1.080</td>
</tr>
<tr>
<td>Bank customers are more satisfied in making online purchases at the convenience of their time</td>
<td>4.39</td>
<td>0.581</td>
</tr>
<tr>
<td>The internet banking gives customers freedom of making financial inquiries at the comfort of their homes or offices without the need to visit the actual banking halls</td>
<td>4.28</td>
<td>0.650</td>
</tr>
<tr>
<td>Use of internet banking offers customers with more tools to make budget plans and manage finances more efficiently and remotely</td>
<td>4.14</td>
<td>0.767</td>
</tr>
<tr>
<td>Internet banking makes it possible for making detailed checks and verification of costs whenever making purchases giving customers much convenience</td>
<td>4.04</td>
<td>0.689</td>
</tr>
<tr>
<td>Internet banking offer simplified data on all the transactions customers make thus enhancing effective personal transaction management</td>
<td>4.23</td>
<td>0.704</td>
</tr>
</tbody>
</table>

The findings presented in Table 4.6, highlights the respondents feedback on the effect of internet banking strategy on the customer service delivery at the Barclays bank of Kenya. The responses were tabulated in means and standard deviation, derived from a likert scale of
1 – 5, where; 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree. The findings show that respondent agree that internet banking strategy simplifies delivery of banking services to bank customers, with a mean of 4.41(SD = 0.716). The respondents also agree that, the integration of internet banking strategy creates and expands the service delivery channels where bank customers can make inquiries related to bank services, mean = 4.02 and SD = 0.643. The findings also show that, respondents were in support that the integration of internet banking programs enables the bank to simplify online cash transactions, with a mean of 4.41(standard deviation = 0.625).

The findings show that respondents agree that internet banking strategy enables access to banking services from a remote location (mean = 4.27, SD = 0.607). Respondents were also in agreement that, internet banking services are easy to track and trace hence boosting bank customer’s confidence on banking services, with a mean of 3.80 (standard deviation = 0.960). The respondents agreed that internet banking strategy enables access to bank services such as online transactions in a faster way (mean = 4.17,SD = 0.762). The respondents agreed that interconnections of telecommunication infrastructure that support internet banking strategy enhance security of the internet banking transactions enhancing security of bank services, with a mean of 4.31 (SD = 0.603). Respondents also expressed affirmation that access to internet banking, reduces the operational costs for the banks enabling more investments in enhancing user experience in accessing banking services, with a mean of 4.22 (standard deviation = 0.682)

The results indicate that the respondents agree that internet banking strategy has expanded the customer base as more customers can easily apply for bank accounts through the internet platforms (mean = 4.29, SD = 0.615). The findings indicate that respondents agree that internet banking strategy enables commercial banks process customer profiles easily which helps in faster processing of loans and credit applications, with a mean of 3.75 and standard deviation = 1.080. Further, respondents agreed that bank customers are more satisfied in making online purchases at the convenience of their time (mean = 4.39, standard deviation = 0.581. The findings also indicate that, respondents agree that the internet banking gives customers freedom of making financial inquiries at the comfort of their homes or offices without the need to visit the actual banking halls (mean = 4.28,SD = 0.650).
The findings indicate that respondents are in agreement that the use of internet banking offers customers with more tools to make budget plans and manage finances more efficiently and remotely, with a mean of 4.14 (SD = 0.767). Respondents expressed agreement that, the internet banking makes it possible for making detailed checks and verification of costs whenever making purchases giving customers much convenience (mean = 4.04 and standard deviation = 0.689). The findings indicate that respondents agree that, internet banking offers simplified data on all the transactions customers make thus enhancing effective personal transaction management, with a mean of 4.23 and standard deviation = 0.704. The findings indicate a positive affirmation on the effect of internet banking in executing financial services, which implies that integration of internet banking services, contributes significantly to enhancing customer service delivery.

4.4.1 Regression Test for Internet Banking versus Customer Service Delivery

The study performs a regression test to examine the underlying relationship between the independent variable internet banking and the dependent variable customer service delivery.

Table 4.7 Model Summary between Internet Banking and Customer Service Delivery

<table>
<thead>
<tr>
<th>Model Summary</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>Model</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>.864</td>
<td>.746</td>
<td>.722</td>
<td>.906</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Internet banking

The findings in Table, 4.7 indicate the model summary derived from the regression test between internet banking versus customer service delivery. The computations deduce, the r-value as 0.864 and the r-square value of 0.746. This imply that, internet banking strategy accounts for 74.6% in variability in customer service delivery with 25.4% variability attributed to factors external to internet banking.

Table 4.8 Analysis of Variance for Internet Banking versus Customer Service Delivery

<table>
<thead>
<tr>
<th>ANOVAa</th>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The ANOVA test results presented in Table 4.8, indicate that the Fisher statistic value is 72.396 with a p-value of 0.001. This indicates that; F (1, 92) = 72.396, p = 0.001 (p < 0.01). This indicates there exist substantial variance between the independent variable internet banking and dependent variable customer service delivery. In addition the test is statistically significant at 0.01, significance level.

Table 4.9 Coefficients table for Internet Banking and Customer Service Delivery

<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</td>
<td>(Constant)</td>
<td>2.507</td>
<td>.245</td>
<td>10.23</td>
</tr>
<tr>
<td></td>
<td>Internet banking</td>
<td>.209</td>
<td>.059</td>
<td>.364</td>
</tr>
</tbody>
</table>

The coefficients Table 4.9, indicate the beta coefficient values for the variables under study are computed as, Constant (β₀) = 2.507 and beta for internet banking (β₁) = 0.209. The p-value for internet banking is recorded as 0.01 (P= 0.001, p < 0.01). The regression equation generated is:

Y (customer service delivery) = 2.507 + 0.209 X₁.

The findings aggregated imply that there exists significant statistical association between internet banking strategy and customer service delivery. The findings thus imply, for every unit change in internet banking, there will be a 0.209 units change in customer service delivery.
4.5 Mobile Banking Strategy on the Customer Service Delivery

The study sought to evaluate the effect of mobile banking strategy on the customer service delivery at the Barclays bank of Kenya. The data in table 4.10 presents the respondent’s views on the subject of mobile banking measured in means and standard deviation.

<table>
<thead>
<tr>
<th>Mobile banking strategy factors</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile banking strategy expands access to banking services for many customers who have access to mobile devices.</td>
<td>4.14</td>
<td>.751</td>
</tr>
</tbody>
</table>
The introduction of mobile banking strategy has enabled commercial bank simplify process through which customers can deposit and withdraw money directly to bank accounts.

<table>
<thead>
<tr>
<th>Description</th>
<th>Median</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile banking strategy has enabled access to unique credit facilities that help customers easily handle financial emergencies without the need to visit actual bank halls.</td>
<td>4.22</td>
<td>.663</td>
</tr>
<tr>
<td>Mobile banking strategy has boosted the popularity of cashless economy as bank customers are able to make all sorts of payments using mobile networks linking to bank accounts.</td>
<td>4.11</td>
<td>.812</td>
</tr>
<tr>
<td>Bank customers are able to make bank inquiries, like requests for bank statements via the phone thus enhancing the levels of customer convenience</td>
<td>4.20</td>
<td>.676</td>
</tr>
<tr>
<td>Mobile banking strategy has enabled access to unique credit facilities that help customers easily handle financial emergencies without the need to visit actual bank halls.</td>
<td>4.31</td>
<td>.748</td>
</tr>
<tr>
<td>Integration of the mobile banking strategy enables expansion of banking services to remote locations that are not connected by internet but have mobile networks</td>
<td>4.16</td>
<td>.740</td>
</tr>
<tr>
<td>Mobile banking strategy enables commercial banks create a consistent channel of interaction with customers thus enhancing user experience</td>
<td>3.89</td>
<td>.963</td>
</tr>
<tr>
<td>Mobile banking strategy assists the bank achieve facilitate faster communication to customers through notifications on new products and services launched by the commercial banks</td>
<td>4.10</td>
<td>.850</td>
</tr>
<tr>
<td>Mobile banking strategy enables users to have an interaction module where customers can make suggestions or pass complaints regarding services thus enabling banks improve service delivery</td>
<td>4.16</td>
<td>.804</td>
</tr>
<tr>
<td>The speed in mobile transaction gives customers value of time in financial transactions as it enhances time convenience</td>
<td>3.87</td>
<td>.852</td>
</tr>
<tr>
<td>Bank customers are impressed by simpler and ease to use banking processes such as electronic payments, internet banking etc</td>
<td>4.49</td>
<td>.503</td>
</tr>
<tr>
<td>Bank customers are more encouraged if they can easily access credit and emergency loans on their mobile phones whenever they have financial emergencies</td>
<td>4.40</td>
<td>.661</td>
</tr>
<tr>
<td>Mobile money enhances personal financial management in tracking expenditures on transactions such personal purchases and paying different kinds of utility bills</td>
<td>4.28</td>
<td>.591</td>
</tr>
<tr>
<td>The cost of making mobile transactions is very effective in terms of time value thus offering cost convenience and comfort</td>
<td>4.07</td>
<td>.866</td>
</tr>
</tbody>
</table>

The results presented in Table 4.10, cover the respondents feedback on the effect of mobile banking strategy on the customer service delivery at the Barclays bank of Kenya. The responses were aggregated utilizing a likert scale of 1 – 5, where; 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree. The findings indicates that the
respondents agree that, mobile banking strategy expands access to banking services for many customers who have access to mobile devices, with a mean of 4.14 and standard deviation of 0.751. The respondents also agree that the introduction of mobile banking strategy has enabled commercial bank simplify process through which customers can deposit and withdraw money directly to bank accounts (mean = 4.17, standard deviation = 0.621). The findings also indicate that, the respondents agree that mobile banking strategy has enabled access to unique credit facilities that help customers easily handle financial emergencies without the need to visit actual bank halls with a mean of 4.22 (SD = 0.663).

The results computed indicate that the respondents agree that, mobile banking strategy has boosted by the popularity of cashless economy as bank customers are able to make all sorts of payments using mobile networks linking to bank accounts, with a mean of 4.11 (standard deviation = 0.812). The findings indicate the respondents agree that bank customers are able to make bank inquiries, like requests for bank statements via the phone thus enhancing the levels of customer convenience (mean = 4.20, standard deviation = 0.676). The findings indicate respondents agree that mobile banking relies on multi-tiered security infrastructure, which protects user confidentiality thus boosting security of financial transactions with a mean of 4.31 (standard deviation = 0.748). The findings indicate that the respondents agree that the integration of the mobile banking strategy enables expansion of banking services to remote locations that are not connected by internet but have mobile networks, with a mean of 4.16 (SD = 0.740).

The findings indicate that the respondents agree that mobile banking strategy enables commercial banks create a consistent channel of interaction with customers thus enhancing user experience, with a mean of 3.89 and standard deviation of 0.963. The respondents expressed agreement that the mobile banking strategy assists the bank achieve facilitate faster communication to customers through notifications on new products and services launched by the commercial banks (mean = 4.10, SD = 0.850). The findings also indicate that, the respondents agree that mobile banking strategy enables users to have an interaction module where customers can make suggestions or pass complaints regarding services thus enabling banks improve service delivery (mean = 4.16, standard deviation = 0.804). The respondents
also agreed that the speed in mobile transaction gives customers value of time in financial transactions as it enhances time convenience (mean = 3.87, standard deviation = 0.852).

The findings show that respondents agree that bank customers are impressed by simpler and ease to use banking processes such as electronic payments, internet banking etc (mean = 4.49, standard deviation = 0.503). The respondents were also in agreement that, the bank customers are more encouraged if they can easily access credit and emergency loans on their mobile phones whenever they have financial emergencies (mean = 4.40, SD = 0.661). The findings indicate that the respondent are in agreement that mobile money enhances personal financial management in tracking expenditures on transactions such personal purchases and paying different kinds of utility bills (mean = 4.28, SD = 0.591). Finally, the respondents agreed that the cost of making mobile transactions is very effective in terms of time value thus offering cost convenience and comfort, with a mean of 4.07 (SD = 0.866). The findings imply that mobile banking strategy positively contributes to enhancing customer service delivery for the commercial bank clients.

4.5.1 Regression Test for Mobile Banking versus Customer service Delivery

The regression test was carried out to examine for underlying statistical associations between the independent variable mobile banking and the dependent variable customer service delivery.

Table 4.11 Model Summary between Mobile Banking and Customer Service Delivery

<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>.740a</td>
<td>.548</td>
<td>.514</td>
<td>.795</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Mobile Banking

The computations in Table 4.11 indicate the model summary derived from the regression test between mobile banking versus customer service delivery. The computations deduce, the r-value as 0.740 and the r-square value of 0.548, which show that there exists strong positive correlation between mobile banking and customer service delivery. The deduced findings imply that, mobile banking strategy accounts for 54.8% in variability in customer service delivery.
delivery with 45.2% variability attributed to factors external to the mobile banking component.

**Table 4.12 Analysis of Variance for Mobile Banking versus Customer Service Delivery**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1.696</td>
<td>1</td>
<td>1.696</td>
<td>19.458</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>7.061</td>
<td>92</td>
<td>.087</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8.757</td>
<td>93</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Customer service  
b. Predictors: (Constant), Mobile Banking

The ANOVA test results presented in Table 4.12, show that the Fisher statistic value is 19.458 with a p-value of 0.000. This indicates that; F (1, 92) = 19.458, p = 0.000 (p < 0.01). This indicates there exist significant variance between the independent variable mobile banking and dependent variable customer service delivery which implies that the variables are different in composition and effect. In addition the test is statistically significant at 0.01, significance level.

**Table 4.13 Coefficients table for Mobile Banking and Customer Service Delivery**

<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>2.093</td>
<td>.289</td>
<td>7.235</td>
<td>.000</td>
</tr>
<tr>
<td>Mobile</td>
<td>.304</td>
<td>.069</td>
<td>.440</td>
<td>4.411</td>
</tr>
<tr>
<td>Banking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Customer service

The coefficients Table 4.13, indicate the beta coefficient values for the variables under study are computed as, Constant ($\beta_0$) = 2.093 and beta for mobile banking ($\beta_2$) = 0.304. The p-value for mobile banking is recorded as 0.000 (P= 0.000, p < 0.01). The regression equation generated is:
\[ Y \text{ (customer service delivery)} = 2.093 + 0.304 X_2. \]

The findings aggregated imply that there exists significant statistical association between mobile banking and customer service delivery within the commercial bank. The findings thus imply, for every unit change in mobile banking, there will be a 0.304 units change in customer service delivery.

**4.6 Electronic Payments Strategy and Customer Service Delivery**

The study sought to examine the influence of electronic payments on the customer service delivery within the Barclays bank of Kenya. The data computed in Table 4.14, highlight the respondent’s opinions on the influence of electronic payments strategy on customer service delivery.

<table>
<thead>
<tr>
<th>Electronic Payments Factors</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Score</td>
<td>Std Dev</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------</td>
<td>-------</td>
<td>---------</td>
</tr>
<tr>
<td>Electronic payments strategy boosts the prospects of customer convenience</td>
<td>4.25</td>
<td>.794</td>
</tr>
<tr>
<td>as with cards they reduce the need to carry cash which can be inconvenient.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronic payments strategy makes it possible for bank customers</td>
<td>4.25</td>
<td>.660</td>
</tr>
<tr>
<td>make online purchases and directly pay from their bank accounts giving them</td>
<td></td>
<td></td>
</tr>
<tr>
<td>incredible convenience.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The use of credit and debit cards enable the customers make faster</td>
<td>4.45</td>
<td>.630</td>
</tr>
<tr>
<td>transactions without unnecessary delay.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The use of credit and debit cards gives bank customers security for their</td>
<td>4.11</td>
<td>.681</td>
</tr>
<tr>
<td>cash.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronic payments open the likelihood of the bank customers set expenditure</td>
<td>4.12</td>
<td>.755</td>
</tr>
<tr>
<td>targets by deciding on transaction limits which enhances the prospects of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>decent financial planning and realization of financial security</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronic payments are easy to document through examination of expenditure</td>
<td>4.04</td>
<td>.689</td>
</tr>
<tr>
<td>records enabling easier tracking of customer expenses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronic payments make it easy to facilitate large scale transactions in</td>
<td>4.27</td>
<td>.664</td>
</tr>
<tr>
<td>a faster way enabling time saving</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronic payments using global credit and debit cards make it possible for</td>
<td>4.14</td>
<td>.718</td>
</tr>
<tr>
<td>the users to make transactions anywhere in the world as they travel around</td>
<td></td>
<td></td>
</tr>
<tr>
<td>enhancing customer convenience.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial bank customers value the levels of financial security in making</td>
<td>3.82</td>
<td>.926</td>
</tr>
<tr>
<td>cash transactions thus welcome the use of tools that guarantee their</td>
<td></td>
<td></td>
</tr>
<tr>
<td>transaction security</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The credit and debit cards used in transactions are easily replaced</td>
<td>4.25</td>
<td>.660</td>
</tr>
<tr>
<td>incase lost or damaged thus giving customers user convenience.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank customers are impressed by simpler and easy to use banking processes</td>
<td>3.64</td>
<td>.932</td>
</tr>
<tr>
<td>such as electronic payments, internet banking etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The use of electronic systems to process electronic payments offer bank</td>
<td>3.89</td>
<td>.699</td>
</tr>
<tr>
<td>customers smart financing experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronic cards offer flexibility in currency management as a customer</td>
<td>3.64</td>
<td>.691</td>
</tr>
<tr>
<td>travels around the world without need to spend time in making currency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>exchanges hence enhancing convenience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credit cards offer flexibility in making financial transactions that are</td>
<td>4.16</td>
<td>.740</td>
</tr>
<tr>
<td>urgent in nature and eliminates pressure for need to deposit cash.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronic cards are effective in preventing frauds as they can easily be</td>
<td>3.96</td>
<td>.818</td>
</tr>
<tr>
<td>cancelled remotely incase stolen</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results presented in Table 4.14, highlights the respondents opinions on the effect of electronic payments strategy on the customer service delivery at the Barclays bank of Kenya. The opinions were measured using a scale of 1 – 5, where; 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree. The results obtained indicate that the
respondents agree that, electronic payments strategy boosts the prospects of customer convenience as with cards they reduce the need to carry cash which can be inconvenient with a mean of 4.25 (SD = 0.794). Respondents were in agreement that electronic payments strategy makes it possible for bank customers make online purchases and directly pay from their bank accounts giving them incredible convenience with a mean of 4.25 (SD = 0.660).

The findings indicate that the respondents agree that the use of credit and debit cards enable the customers make faster transactions without unnecessary delay, with a mean of 4.45 (SD = 0.630). The respondents agree that the use of credit and debit cards gives bank customers security for their cash (mean = 4.11, standard deviation = 0.681). The findings indicate that the respondents affirmed that electronic payments open the likelihood of the bank customers set expenditure targets by deciding on transaction limits which enhances the prospects of decent financial planning and realization of financial security with a mean of 4.12 and standard deviation of 0.755. The findings indicate the respondents were in agreement that, electronic payments are easy to document through examination of expenditure records enabling easier tracking of customer expenses (mean = 4.04, standard deviation = 0.689).

The results obtained show that the respondents were in agreement that the electronic payments make it easy to facilitate large scale transactions in a faster way enabling time saving, mean of 4.27 (SD = 0.664). The findings show that, respondents agree that electronic payments using global credit and debit cards make it possible for the users to make transactions anywhere in the world as they travel around enhancing customer convenience (mean = 4.14, SD = 0.718). Further, respondents were in agreement that, commercial bank customers value the levels of financial security in making cash transactions thus welcome the use of tools that guarantee their transaction security (mean = 3.82 ,standard deviation = 0.926). The findings indicate that the respondents agree that the credit and debit cards used in transactions are easily replaced in case lost or damaged thus giving customers user convenience with a mean of 4.25 (SD =0.660). Respondents agreed that bank customers are impressed by simpler and ease to use banking processes such as electronic payments, internet banking etc, (mean = 3.64, standard deviation= 0.932).

The findings indicate that the respondents agree that the use of electronic systems to process electronic payments offer bank customers smart financing experience, with a mean of 3.89,
The respondents affirmed that the electronic cards offer flexibility in currency management as a customer travels around the world without need to spend time in making currency exchanges hence enhancing convenience (mean = 3.64, SD = 0.691). The findings indicate that, respondents agree that credit cards offer flexibility in making financial transactions that are urgent in nature and eliminates pressure for need to deposit cash, with a mean of 4.16 (SD = 0.740). Finally the respondents were in agreement that, the electronic cards are effective in preventing frauds as they can easily be cancelled remotely incase stolen, with a mean of 3.96 and standard deviation of 0.818. The findings imply that the integration of electronic payments platforms contributed to enhancing customer service delivery within commercial banks.

4.6.1 Regression Test for Electronic payments versus Customer service Delivery

The study performed the regression test to evaluate the underlying statistical associations between the independent variable electronic payments and customer service delivery.

Table 4.15 Model Summary for electronic payments versus customer service delivery

<table>
<thead>
<tr>
<th>Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Electronic payments

The results presented in Table, 4.15 show the model summary derived from the regression test between electronic payments versus customer service delivery. The results indicate that the r-value is 0.631 and the r-square value of 0.398, which show that there exists strong positive correlation between electronic payments and customer service delivery. The computed results imply that, electronic payments account for 39.8% in variability in customer service delivery with 60.2% variability attributed to factors external to the electronic payments.

Table 4.16 ANOVA for electronic payments versus customer service delivery

<table>
<thead>
<tr>
<th>ANOVAa</th>
</tr>
</thead>
</table>

54
The ANOVA test results presented in Table 4.16, show that the Fisher statistic value is 16.458 with a p-value of 0.002. This indicates that; F (1, 92) = 16.976, p = 0.002 (p< 0.01). This indicates there exist significant variance between the independent variable electronic payments and dependent variable customer service delivery which implies that the variables differ considerably from each other in terms of characteristics and finally the test is statistically significant at 0.01, significance level.

**Table 4.17 Coefficients for electronic payments versus customer service delivery**

<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></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>2.319</td>
<td>.332</td>
<td>6.994</td>
</tr>
<tr>
<td></td>
<td>Electronic payments</td>
<td>.249</td>
<td>.079</td>
<td>.331</td>
</tr>
</tbody>
</table>

The coefficients Table 4.17, show that the beta coefficient values for the variables under study are computed as, Constant (β₀) = 2.319 and beta for electronic payments (β₃) = 0.249. The p-value for electronic payments is recorded as 0.000 (P= 0.002, p < 0.01). The regression equation generated is:

\[ Y = 2.319 + 0.249 X_3. \]

The findings aggregated imply that there exists significant statistical association electronic payments and customer service delivery within the bank. The findings thus imply, for every
unit change in electronic payments, there will be a 0.249 units change in customer service delivery.

4.7 Automated Cash Machines and Customer Service Delivery
The study sought to evaluate the effect of Automated Cash machines on the customer service delivery within the commercial banks. The computed data in Table 4.18 indicates the respondent views measured in means and standard deviation.

<table>
<thead>
<tr>
<th>Automated Cash machines factors</th>
<th>Mean</th>
<th>Std.</th>
</tr>
</thead>
</table>

Table 4.18 Automated cash machine factors Mean & Standard Deviation
The results presented in Table 4.18, highlight the respondents' opinions on the effect of automated cash machines on customer service delivery at the Barclays Bank of Kenya. The responses were aggregated using a scale of 1 – 5, where; 1 = strongly disagree, 2 = disagree,
3 = neutral, 4 = agree and 5 = strongly agree. The findings indicate that the respondents agree that, the automated cash machines enable faster transactions enabling user convenience in making cash transactions, with a mean of 3.95 (SD = 0.714). The respondents were in agreement that automated cash machines such as PDQ machines enable users to easily make payments in supermarkets, restaurants and clubs eliminating the need for cash boosting user convenience, with a mean of 3.83 (SD = 0.838). The findings show that the respondents agree that the use of electronic machines enable bank customers who run small businesses manage their transactions in a highly organized fashion boosting efficiency (mean = 4.07, SD = 0.729).

The findings show that respondents agree that automated machines such as ATM’s enable bank customers easily make transactions such as cash withdrawals and deposits reducing eliminating the need to visit bank halls to make similar transactions, with a mean of 3.86 (SD = 0.718). Respondents were in agreement that the cash machines like ATM are accessible anytime of the day and night, even on holidays which increase the level of convenience to the bank customers (mean = 3.84, SD = 0.634). The findings show that, the respondents agree that the use of automated cash machines in bank halls such as the money counting machines improve on task execution speeds giving bank customers faster services with a mean of 3.99 (SD = 0.690). The findings indicate respondents agree that the use of Automated cash machines in banking halls, increase the levels of efficiencies in delivering financial services to bank customers (mean = 3.94, standard deviation = 0.722).

The results obtained indicate that respondent’s agree that automated cash machines such as the digital forensic checkers and counters help in preventing fraud like fake cash, thus protecting financial integrity with a mean of 3.75 (SD = 0.763). The findings show that, the respondents agree that the use of automated cash machines in banks give bank managers access to tools they can use in making faster and efficient decision on customer service delivery, with a mean of 4.10 with a standard deviation of 0.743. The respondents were in agreement that bank customers value efficient bank transactions when undertaking banking services (mean = 3.71, standard deviation = 0.804). The findings indicate that the respondents were in agreement that, the automated cash machines are largely conveniently
located giving users flexibility in accessing them, with a mean of 4.29 and standard deviation of 0.672.

The findings indicate that the respondents were in agreement that, the automated cash machines with facilities of cash deposits by customer’s offers great convenience in managing and protecting customer’s money with a mean of 3.78 (SD = 0.682). The findings indicate that respondents were in agreement that automated cash machines are efficient in terms of producing instant transaction reports which enable the customers track their financial expenditures, with a mean of 3.61 (SD = 0.678). The respondent agreed that automated cash machines are highly simplified hence very easy to use and handle yet equally very highly reliable in facilitating financial transactions, with a mean of 3.92 (SD = 0.719). The findings indicate that the respondents expressed agreement that the automated cash machines can handle numerous transactions within a short period of time hence integrating speed and efficiencies for users who rely on them in running their businesses with a mean of 3.59 and standard deviation of 0.771. The findings imply that automated cash machines contribute to enhanced effectiveness in customer service delivery.

4.7.1 Regression Test for Automated Cash Machines versus Customer service Delivery

The study performed a regression test to test for the associations between the study variables, automated cash machines versus the customer service delivery.

Table 4.19 Model Summary for Automated Cash Machines versus customer service delivery

<table>
<thead>
<tr>
<th>Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Automated cash Machines

The model summary presented in Table, 4.19 indicates the derived from the regression test between automated cash machines versus customer service delivery. The computations deduce, the r-value as 0.615 and the r-square value of 0.378. This implies that, automated
cash machines account for 37.8% in variability in customer service delivery with 62.2% of variability in customer service delivery attributed to factors external to automated cash machines.

Table 4.20 ANOVA for Automated Cash Machines versus customer service delivery

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>.613</td>
<td>1</td>
<td>.613</td>
<td>16.099</td>
<td>.001b</td>
</tr>
<tr>
<td>Residual</td>
<td>8.143</td>
<td>92</td>
<td>.101</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8.757</td>
<td>93</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Customer service
b. Predictors: (Constant), Automated cash Machines

The ANOVA test results presented in Table 4.20, show that the Fisher statistic value is 16.099 with a p-value of 0.001. This indicates that; F (1, 92) = 16.099, p = 0.001 (p< 0.01). This indicates there exist significant variance between the means of independent variable automated cash machines and dependent variable customer service delivery which implies that the variables vary from each other significantly.

Table 4.21 Coefficients for Automated Cash Machines versus customer service delivery

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>(Constant)</td>
<td>2.106</td>
<td>.509</td>
</tr>
<tr>
<td>Automated cash Machines</td>
<td>.315</td>
<td>.128</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Customer service

The coefficients Table 4.17, show that the beta coefficient values for the variables under study are computed as, Constant ($\beta_0$) = 2.106 and beta for automated cash machines ($\beta_4$) =
The p-value for automated cash machines is recorded as 0.000 (P= 0.002, p < 0.01). The regression equation generated is:

\[ Y \ (customer \ service \ delivery) = 2.106 + 0.315 \ X_4. \]

The findings aggregated imply that there exists significant statistical association automated cash machines and customer service delivery within the bank. The findings thus imply, for every unit change in automated cash machines will trigger a 0.315 units change in customer service delivery.

**4.8 Multivariate Regression Analysis**

The study performed a combined regression test for the combined independent variables notably; internet banking, mobile banking, electronic payments and automated cash machines versus customer service delivery.

<table>
<thead>
<tr>
<th>Model Summary for the Multivariate regression Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

The model summary presented in Table 4.22 shows the resulting values for the regression test between combined independent variables, namely; internet banking, mobile banking, electronic payments and automated cash machines versus customer service delivery. The results indicate that the r-value is 0.916 and the r-square value of 0.839, which show that there exists strong positive correlation between the combined independent variables and customer service delivery. The computed results imply that, the independent variables including; internet banking, mobile banking, electronic payments and automated cash machines account for 83.9% in variability in customer service delivery with 16.1% variability attributed to factors external to the technology integration factors making up the combined independent variables.
Table 4.23 ANOVA for the combined technology integration factors

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>2.241</td>
<td>4</td>
<td>.560</td>
<td>76.705</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>6.516</td>
<td>79</td>
<td>.084</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>8.757</td>
<td>93</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Customer service
b. Predictors: (Constant), Automated cash Machines, Internet banking, Electronic payments, Mobile Banking

The ANOVA test results presented in Table 4.23, show that the Fisher statistic value is 76.705 with a p-value of 0.000. This indicates that; F (4, 79) = 76.705, p = 0.000 (p < 0.01). This indicates there exist significant variance between the independent variables internet banking, mobile banking, electronic payments and automated cash machines and dependent variable customer service delivery which implies that the variables are very different from each other in the aspect of characteristics and composition. The results also show that the test is statistically significant at 0.01, significance level.

Table 4.24 Coefficient for the combined technology integration factors

<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</td>
<td>(Constant)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet</td>
<td>.123</td>
<td>.061</td>
<td>.215</td>
<td>.000</td>
</tr>
<tr>
<td>Mobile</td>
<td>.199</td>
<td>.083</td>
<td>.288</td>
<td>.000</td>
</tr>
<tr>
<td>Electronic</td>
<td>.072</td>
<td>.088</td>
<td>.095</td>
<td>.000</td>
</tr>
<tr>
<td>Automated</td>
<td>.087</td>
<td>.128</td>
<td>.073</td>
<td>.000</td>
</tr>
</tbody>
</table>

The coefficients Table 4.24, indicate the beta coefficient values for the variables under study are computed as, Constant ($\beta_0$) = 1.383 and beta values for independent variables including,
internet banking, \((\beta_1) = 0.123\), mobile banking \((\beta_2) = 0.199\), electronic payments \((\beta_3) = 0.072\) and automated cash machines \((\beta_4) = 0.087\)The p-value for mobile banking is recorded as 0.000 \((P= 0.000, p < 0.01)\). The regression equation generated is:

\[
Y \text{ (customer service delivery)} = 1.383 + 0.123 X_1 + 0.199 X_2 + 0.072 X_3 + 0.087 X_4
\]

The findings aggregated imply that there exists significant statistical association between the independent variables namely; internet banking, mobile banking, electronic payments, automated cash machines and customer service delivery. The findings thus imply; for every unit change in internet banking, there will be a 0.123 units change in customer service delivery, for every unit change in mobile banking, there will be a 0.199 units change in customer service delivery, for every unit change in electronic payments, there will be a 0.072 units change in customer service delivery and finally for every unit change in automated cash machines, there will be a 0.087 units change in customer service delivery.

4.9 **Summary of the Chapter**

This section of the study covered the results and findings on the effect of technology integration on customer service delivery for the Barclays bank of Kenya. The main areas covered include; the demographic details of the respondents, the descriptive statistics for all the independent variables notably; internet banking, mobile banking, electronic payments and automated cash machines and their relative effect on customer service delivery. The section also covered the inferential statistics which was implemented using regression test. The next section is chapter five, which covers summary, discussion, conclusion and the recommendations of the study.
CHAPTER FIVE

5.0 SUMMARY, DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction
Chapter five covers the summary of the findings, discussions, conclusion and recommendations derived from the study. The summary of the findings highlights the summary derived from the influence of technology on the customer service delivery by the commercial banks. Discussion links the findings with the literature and points the significance of the study findings. The conclusion highlights the evidence deduced in the study and the recommendations points to the suggestions derived from the study on the technology utilization in customer service delivery by the commercial banks.

5.2 Summary
The purpose of this study was to examine the effect of technology integration on the service delivery within commercial banks. The study sought to assess four aspects of technological integration within operations carried out by the commercial banks, which include; internet banking, mobile banking, electronic payments and the automated cash machines. The study evaluated the impact of each of these technological platforms on customer service delivery within commercial banks. The target population included Barclays bank employees who have been instrumental in the implementation of these technological systems towards enhancing customer service delivery. The sample size was derived using Krejcie and Morgan estimate, deducing a sample size of 132 respondents, from which 94 aptly respondent to the questionnaires in time for data Analysis. A structure questionnaire was used as the primary method of data collection. The data was presented using frequency tables. Regression Analysis was used to examine the relationship between the independent and the dependent variables.

The findings deduced in the study show that internet banking has contributed to enhanced financial services to the bank customers. The study found that there exist a strong positive correlation between internet banking and customer service delivery registering an r-value of 0.864. The study further established that, internet banking accounts for 74.6% in variability
for the customer service delivery. The findings show that internet banking strategy has improved customer service experience, through enhancement in; simplified banking services, expansion of service delivery channels, simplified online transactions, accessing bank services remotely, service tracing and tracking, enhanced speed of transactions, enhanced security of transactions, reduced operational costs, expanded customer base, enhanced customer profile processing, customer freedom in financial inquiries, effective budgeting amongst customers, enhanced checks and verifications and effective financial data processing. The findings thus show that, internet banking strategy is a positive factor in enhancing diverse financial services to bank customers.

The findings show that mobile banking strategy has significantly contributed towards enhancing customer service delivery for the banking services. The study found that, mobile banking account for 54.8% in variability for the customer service delivery. In addition, regression test deduced an r-value of 0.740, which shows that there exists strong positive correlation between mobile banking and customer service delivery. The findings show that mobile banking factors central to positive influence towards customer service delivery include; easy access by many customers, simplified financial transactions, simplified credit facilities, enhanced cashless economy, mobile reach to financial inquiries, secured transactions, extending financial services to remote locations, enhanced channels of interaction, faster communication network, continued improvement in service delivery, faster money transfers, customer satisfaction, mobile loans for emergencies, tracking personal expenditures and lower transaction costs. This has been central to enhancing commercial banks customers’ experience.

The study found that electronic payments contribute significantly in offering bank customers in making payments and conducting simple transactions. The study established that, electronic payments account for 39.8% in variability for customer service delivery with an r-value of 0.631, which deduce a strong positive correlation. The study establishes that bank customers contribute positively in enhancing customer experience in numerous ways, including; enhancing customer convenience, increased electronic transactions over ecommerce platforms, faster financial transactions, enhanced cash security, effective personal budgeting, easy documentation of expenditures, easier large scale transactions,
easier financial transactions while travelling, increased trust in completing transactions, easy card replacement and financial effectiveness, simplified financial transactions, smart financial experience, flexibility in currency management, easy processing of urgent transactions and efficient fraud prevention.

The study makes a finding that automated cash machines have contributed significantly towards enhancing bank services to commercial bank customers. The findings show that, there exists a strong positive correlation between automated cash machines and the customer service delivery, registering an r-value of 6.15. Further, the study found automated cash machines to account for significant variability in customer service delivery at 37.8%. The study found that automated cash machines impact positively in offering customer services contributing to; faster financial transactions, convenient payments mechanisms, efficient management of transactions, faster execution and handling financial transactions, easy access to cash, faster payments processing, customer convenience in access banking services, elimination of cash fraud, enhanced financial decision making, efficient transactions processing, enhances financial flexibility, enhanced cash security, instant access to transaction data, ease of use and executing transactions, and huge transaction volume.

5.3 Discussion

5.3.1 Effect of Internet Banking on Customer Service Delivery

The study found that internet banking expands banking services and offering access to financial service over the internet platform. These findings agree with Weldearegay (2017), who explained that commercial bank clients can access financial services, through online channels from anywhere at any point of time. The findings also agree with Sikdar et al. (2015) who established that the internet banking channels enable individuals to make real-time financial decisions conveniently independently of time and location. The findings agree with Aliyu et al. (2014), who found that the core benefits of online banking include convenience and low-cost advantage thereby customer satisfaction.

The study found that internet banking platform offered comprehensive platform that delivered banking service to bank customers remotely and at their own convenience. The
findings agree with Firdous and Farooqi (2017) who found that the internet is the cheapest delivery channel for banking products as by using internet as a channel of delivering services banks can reduce the number of branches as well as their staff. The findings also agree with Bernal (2017) who found that commercial banks today regard internet banking as an equally important channel as the traditional channels of branches, automated teller machines (ATM), telephone banking and call centers. Further, the findings show that the new banking environment, Internet Banking is increasingly managed as an operational activity and an important element of a multi-channel strategy as observed by Firdous and Farooqi (2017).

The study also found that internet banking offer great convenience to bank customers in access to banking services as the accessibility is available around the clock so long as there is direct connection to the internet. The findings agree with Villa et al. (2012) who explained that internet banking offer convenience due to 24-hour reliability. The findings are consistent with Noor (2011) who observed that internet banking guarantee high transactions speed and effectiveness, considering that many commercial banks that use electronic banking now offer sophisticated tools, including account aggregation, stock quotes, rate alerts and portfolio managing programs to help you manage all your assets more effectively.

The study identified that, embracing internet banking model expanded accessibility to smarter methods undertaking financial services. The findings agree with Ling et al. (2016), who explained that the internet banking is the industry which uses computer technology to provide better services to customers and help in the development of banking practices. The findings also agree with Ahanger (2011) who explained that, through integration of advanced technology and innovation in the financial and banking sectors, Internet banking has become more familiar to the customers of traditional banks.

The study established that, internet banking created an expanded accessibility to financial services beyond just the physical hard currency exchanges into the global trade and transactions. The findings also highlight the increased interest amongst the bank customers to have convenience and flexibility of buying anything they wish over the internet. These findings are in line with Sikdar et al. (2015), who detailed that internet banking expended the horizons for executing financial transactions for the bank customers giving them ability to buy and trade over the global market place. Further, the findings agree with Nimako et al.
(2013) who submitted that, internet banking offers customers convenience in undertaking their online financial transactions from anywhere across in the world.

5.3.2 Effect of Mobile Banking on Customer Service Delivery

The study established that mobile banking enabled bank customers access the banking services over the mobile devices. The findings are in line with conclusion by Al-Jabri and Sohail, (2012) who submitted that mobile banking applications provides banking services on the mobile device and enables user access applications which interact with the bank’s servers. The findings indicate that consumers expect mobile banking applications to integrate significant levels of operational flexibility and subsequent efficiencies. All transactions carried out by the application must therefore exhibit atomicity. This means that when carrying out a transaction, it is either completed in full or does not happen at all (Hilton et al., 2014).

The study established that the main factor that drives the acceptability of the mobile banking is the convenience in accessibility of the mobile bank services. The findings are consistent with submissions by Ariff et al. (2013) who explained that for mobile applications, availability is critical since customers need to be in a position to carry out transactions such as deposits, withdrawals, and cash transfers at any time of day and any day of the week. This implies that the developed system must be robust enough to handle customer requests in times when large numbers of customers seek to transact on the application. The findings agree with Yang et al. (2013), who explained that application responsiveness is determined by the ability of a system to provide the required input prompts, accept user inputs, provide outputs, and carry out processes initiated by the user.

The findings show that mobile phone presented a great opportunity for the provision of financial services to the unbanked. In addition to technological and economic innovation, policy and regulatory innovation was needed to make these services a reality. The finding agrees with the Kumar et al. (2016) who found that the user must be assured that the transactions will be secure and confidentiality is assured. The findings agree that data security is an important feature in modern systems and applications. Data security is
important mainly because there are numerous risks facing data on the internet, systems and network.

The findings show that efficiency in mobile banking is determined by the quality and the nature in the hardware devices in use. This submissions are consistent with Kim and Wattanapongsakorn (2015) who explained that all the mobile banking applications will have to rely on hardware and the physical infrastructure of the network. It is therefore very important to ensure hardware consideration when talking about security. Further, the findings indicate that the effectiveness of the mobile banking platform is convenience in handling user needs. This indicates that, the platform should be responsive to customer queries and inputs. This finding is consistent with Yang, et al. (2013) pointed out that responsiveness is the capability of a banking platform to provide the user with an interface for imputing prompts, accept customer prompts, provide outputs, and generally complete the queries initiated by the user. In addition, Nayebi, et al. (2012) explained that since users need highly responsive systems for quick and efficient transactions, banks have little choice but to meet the customer needs.

**5.3.3 Effect of Electronic Payments on Customer Service Delivery**

The study findings show that, electronic payments enable bank customer’s access banking services electronically and remotely. This is consistent with Kaur (2017) who noted that the advent of electronic payments paved way for the introduction of smarter models through which bank customers can access their money electronically by the use of mechanisms such as credit and debit cards. The findings also agree with Lazo and Casu (2017) who explained that the introduction and use of electronic payment instruments guaranteed the promise of broad benefit to both commercial banks and consumers in the form of reduced costs, greater convenience and more secure, reliable means of payment and settlement for a potentially vast range of goods and services offered worldwide over the internet or other electronic networks.

The study established that, electronic payments offered convenient operational platform that enables the execution of multiple transactional queries over numerous channels hence offering the prospect of interoperability. This is a vital prospect of efficient financial system (Lazo & Casu, 2017). Furthermore, the findings are in agreement with the World Bank
(2016), submitting that the interoperability is no longer limited by national borders and the overall ecosystem has become more complex for commercial systems in effort to offer more comprehensive financial solutions. This also indicates that a lack of interoperability can result in inefficiencies due to overlapping or limited coverage and sunken investment costs, which can negatively impact adoption and usage.

The study found that electronic payments platforms offered broad channels for making simple and efficient funds transfers hence offering massive convenience. These findings are in agreement with Juma (2013) who postulated that an electronic fund transfer enables, withdrawal, transfer of moneys between accounts, and payment initiatives performed electronically. The findings agree with Karanja (2017) that banking customers have convenience in making electronic funds transfer creating significant convenience. The findings agree with Mapharing and Basuhi (2017) who submitted that EFT requires highly efficient controls built into the systems, and the process must be controlled both at the sender and recipient sides. Controls need to exist at the intermediary stages wherever information is passed, stored or processed (Nadig & Anusha, 2017).

The findings show that electronic payments offers significant financial convenience by equally offer a very serious exposure to fraud risks. The findings are in line with Mapharing and Basuhi (2017) who noted that electronic payments requires highly efficient controls built into the systems, and the process must be controlled both at the sender and recipient sides. The findings also support submissions by Nadig and Anusha (2017) who explained that controls need to exist at the intermediary stages wherever information is passed, stored or processed to ensure strong capability to track transactions and prevent fraud. The findings also agree with Wisdom (2012) who viewed that, not only do electronic payments hasten financial transactions, but also enable effective way to undertake faster currency exchange across international spectrum.

**5.3.4 Effect of Automated Cash Machines on Customer Service Delivery**

The study established that speed execution of financial transactions was the main factor that inspired the need for automated cash machines. The findings demonstrate that, automated cash machines offer significant flexibility in financial executions. The findings agree with
Vinkirk et al., (2012) who submitted that of automated cash machines and devices have critically contributed to faster execution of commercial bank operations such as the simple activities of counting money.

The findings show that, the adoption of automated cash machines contribute to advanced procedure for validation and authentication. The findings agree with Kaur (2017) who observed that the use of electronic devices search as the PDQ machines, cash counting machines and the ATM’s have resulted in the actual automation of the financial transactions in banks which enables facilitation of easier electronic procedures in facilitating money processes. The findings also agree with Mundal (2013) who explained that the use of electronic devices search as the PDQ machines, cash counting machines and the ATM’s have resulted in the actual automation of the financial transactions in banks which enables facilitation of easier electronic procedures in facilitating money processes.

The study shows that automated machines contributed to the reduction of the manual workload related to the banking operation. The findings agree with Odior and Banus (2012) who explained that machines performing basic tasks, of which previously were executed manually, contributed to a reduction of the actual work load performed by first line employees. Subsequently, reduced workload contributes to reduced operational tasks and an equal reduction in costing for functions related to manual tasks, which in turn meant a reduction in the overall cost of operation.

The findings also indicate that, the adoption of automated cash machines enhances the efficiency and speeds of financial transactions. The findings are in line with Dymski (2016) who explained with automation of the banking services, the customers were guaranteed faster bank services and increased level of efficiencies. The findings agree with Mundal (2013) who observed that bank customers, have been the beneficiaries in the automation considering the increased banking competition which meant that every bank was rushing to be ahead of the pack in enhancing the customer experience. The study also agree with submissions by Nyoni and Bonga (2017) who observed that the integration of automated cash machines, enhance the overall levels of efficiencies in cash handling.
The findings also show the importance of user focused approach and viability for the effective cash handling machines that are both reliable and secure. Findings agree with Mandal (2013) who submitted that integrating multi-tier level of accreditation, such as multiple levels of password verification enhanced the levels of overall security feature. Mundal (ibid) however observed that increased tiers of verification, comes with the baggage of requiring the users memorize a number of passwords, which could be a momentous task, which highlights the aspect of user convenience and simplicity. The findings back Domeher et al. (2014) who warned that simplification was valuable user-centric approach but also highlighted the need for complexity in the internal integration of the system features to guarantee the security aspect.

5.4 Conclusions

5.4.1 Internet Banking on the Customer Service delivery

The study concludes that internet banking strategy has been central towards enhancing customer service delivery by commercial banks. The study shows that internet banking offers the commercial banks customers an expansive platform from which they are able to make online transactions such as making orders in ecommerce websites or purchasing digital products. The study concludes that internet banking is a platform which has provided commercial bank customers with transaction convenience in making financial transactions over the internet reducing the need for cash transactions. Further, the study concludes internet banking strategy offers bank customers flexibility as they are able to access their bank accounts with ease and much simplicity where they make direct bank inquiries and also update profile information. The study concludes that the integration of internet banking strategy has been central in expanding accessibility to financial services by customers remotely.

5.4.2 Mobile Banking Strategy on Customer Service Delivery

The study concludes that mobile banking strategy has been significantly vital in enhancing financial services. Mobile banking offer simplified and convenient platform through which commercial banks customers can access financial services. The study concludes that integration of mobile banking technology platforms within the commercial banks have
contributed to expansion of the financial services to many customers as they are provided with flexibility in making transaction from their mobile devices. The study concludes that mobile banking strategy is a unique technological platform that has transformed mobile devices into multipurpose devices with ability to execute financial transactions.

5.4.3 Electronic Payments on Customer Service Delivery

The study concludes that integration of electronic payments technologies has expanded the access to banking services for many customers. The use of electronic payments has enabled many bank customers’ access debit and credit transactions cards which enable diverse financial transactions such as credit card payments. This has enhanced customer experience by giving them flexibility in making transactions and also budgeting their expenditures. Electronic payments also enable the commercial banks customers determine their own budgets thus instilling smart financial management habits among the bank customers. The study concludes that electronic payments positively contribute to enhancing customer services to commercial banks customers.

5.4.4 Automated Cash Machines on Customer Service Delivery

The study concludes that automated cash machines have significantly contributed towards enhancing the access to financial services beyond the banking halls. Automated cash machines make up diverse cash processing tools that are easily accessed by bank customers in various places. The study concludes that the availability of automated cash machines, notably PDQ machines and ATM offer bank customers convenience in making purchases at different locations across the world. The convenient location of automated cash machines across different places of business such as retail outlets, gas stations, entertainment joints etc, is central to guaranteeing convenience to the bank customers. The study therefore concludes that automated cash machines offer convenience and flexibility to bank customers hence enhancing effective service delivery.
5.5 Recommendations

5.5.1 Recommendations for Practice

5.5.1.1 Effect of Internet Banking on Customer Service Delivery

Internet banking expands access to banking services beyond the physical banking hall to remote locations. The study recommends the commercial banks should encourage the rolling out of the internet infrastructure to the country side and remote location so that to enable more people to access the internet banking services. Commercial Banks should also expand the current internet banking platforms to integrate more interactive features, such as the addition of investment lessons, currency exchange tools and advanced direct chartroom to increase the number of internet banking users.

5.5.1.2 Effect of Mobile Banking on Customer Service Delivery

The study recommends for the expansion of the mobile banking services to cover more banking portfolios such as expenditure tracking features. In addition, the study recommends commercial banks to expand the mobile banking services and link them to other platforms such as the internet banking. The study also recommends for the improvement of the mobile money technology to simplify the mobile banking procedures. Finally, the study suggests for the reduction the transactions costs incurred by the bank customers to encourage more use of the services.

5.5.1.3 Effect of Electronic Payments on Customer Service Delivery

The study recommends for the integration of the electronic banking systems with both the mobile and the internet banking. Commercial Banks should also expand the transaction limitation that are set for electronic payments to enable bank customers utilize this platforms in executing large financial transactions. The study also recommends for the moderation of the cross platform and transaction cost incurred by bank customers so as to accelerate increase in the volume of electronic payments transactions.
5.5.1.4 Effect Automated Cash Machines on Customer Service Delivery

The study recommends for more advocacy by commercial banks on the benefits of using automated cash machines by small businesses to expand the utilization of this machines across the country. The study also recommends for technology upgrade for the cash machines to integrate feature that will link the machines with other banking platforms such as the mobile and internet banking in order to expand the services offered to bank customers.

5.5.2 Recommendations for Further Studies

This study examined the effect of technology integration on the customer service delivery among commercial banks. The case study was Barclays bank of Kenya with focus on the implementation of the technology platforms. The study suggests future studies to widen the scope in terms of examining the utilization of technology to enhance customer service delivery for other Kenyan commercial banks. The study also suggests for future researchers to examine the learning curve among commercial bank customers in embracing new technological platforms introduced by commercial banks to enhance commercial bank services.
REFERENCES


Alalwan, Ali Abdallah, Yogesh K. Dwivedi, and Nripendra P. Rana. (2017)."Factors influencing adoption of mobile banking by Jordanian bank customers: Extending


APPENDIX I: COVER LETTER

Aaron Muteti

United States International University

P.O.BOX 14634-00800

NAIROBI

Dear Respondent,

REF: REQUEST FOR YOUR PARTICIPATION

I am a Master of Business administration student at the United States International University Africa, majoring in Human Resource. As a requirement before graduation, is to write a thesis, which I chose the topic, “A Study on the effects of technology integration strategy on the customer service delivery at Barclays Bank of Kenya.”

You have been selected to take part in the study. This is to kindly request you to help me in collecting the required data by filling the questionnaire. The information you will provide will only be used for the academic purposes, thus it will be treated with utmost confidentiality. If you would like to receive a copy of this report, please indicate so by writing your email address on the back of the questionnaire.

Yours sincerely,

Aaron Muteti
APPENDIX II: QUESTIONNAIRE

SECTION A: BACKGROUND INFORMATION

1. Age Distribution
   i. 18 – 30 years
   ii. 31 – 35 years
   iii. 36 – 40 years
   iv. 41 – 45 years
   v. Over 46 years

2. Education Level
   i. O-Level
   ii. Diploma
   iii. Degree
   iv. Masters/Post-Graduate Diploma
   v. PhD

3. Department attached at the Bank
   i. Corporate Affairs
   ii. Investments
   iii. Human Resources Division
   iv. IT Division
   v. Credit department
   vi. Procurement
   vii. Logistics
   viii. S& L Department
   ix. Finance

4. Job Experience
   i. Below 5 years
   ii. 6 – 10 years
   iii. 11 – 15 years
   iv. 16 – 20 years
   v. Over 20 years
SECTION B: INTERNET BANKING STRATEGY

Please indicate the extent to which you agree with the following statement on the effect of internet banking strategy on customer service delivery at Barclays Bank of Kenya. Using a scale of 1 – 5 where; 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree, indicate how you Agree/Disagree with the following statements.

<table>
<thead>
<tr>
<th>No.</th>
<th>STATEMENTS</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>1.</td>
<td>Internet banking strategy simplifies delivery of banking services to bank customers.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>The integration of internet banking strategy creates and expands the service delivery channels where bank customers can make inquiries related to bank services.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Integration of internet banking programs enables the bank to simplify online cash transactions.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Internet banking strategy enables access to banking services from a remote location.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Internet banking services are easy to track and trace hence boosting bank customer’s confidence on banking services.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Internet banking strategy enables access to bank services such as online transactions in a faster way.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>The interconnections of telecommunication infrastructure that support internet banking strategy enhance security of the internet banking transactions enhancing security of bank services.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Access to internet banking, reduces the operational costs for the banks enabling more investments in enhancing user experience in accessing banking services.</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Internet banking strategy has expanded the customer base as more customers can easily apply for bank accounts through the internet platforms.</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Internet banking strategy enables commercial banks process customer profiles easily which helps in faster processing of loans and credit applications.</td>
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<tr>
<td>11.</td>
<td>Bank customers are more satisfied in making online purchases at the convenience of their time.</td>
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</tbody>
</table>
12. The internet banking gives customers freedom of making financial inquiries at the comfort of their homes or offices without the need to visit the actual banking halls

13. Use of internet banking offers customers with more tools to make budget plans and manage finances more efficiently and remotely

14. Internet banking makes it possible for making detailed checks and verification of costs whenever making purchases giving customers much convenience

15. Internet banking offer simplified data on all the transactions customers make thus enhancing effective personal transaction management

SECTION C: MOBILE BANKING STRATEGY

Please indicate the extent to which you agree with the following statement on the effect of mobile banking strategy on customer service delivery at Barclays Bank of Kenya. Using a scale of 1 – 5 where; 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = disagree, indicate how you Agree/Disagree with the following statements

<table>
<thead>
<tr>
<th>No.</th>
<th>STATEMENTS</th>
<th>RATING</th>
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<tbody>
<tr>
<td>1.</td>
<td>Mobile banking strategy expands access to banking services for many customers who have access to mobile devices.</td>
<td>(1) (2) (3) (4) (5)</td>
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<tr>
<td>2.</td>
<td>The introduction of mobile banking strategy has enabled commercial bank simplify process through which customers can deposit and withdraw money directly to bank accounts.</td>
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<td>3.</td>
<td>Mobile banking strategy has enabled access to unique credit facilities that help customers easily handle financial emergencies without the need to visit actual bank halls.</td>
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<td>4.</td>
<td>Mobile banking strategy has boosted the popularity of cashless economy as bank customers are able to make all sorts of payments using mobile networks linking to bank accounts.</td>
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<tr>
<td>5.</td>
<td>Bank customers are able to make bank inquiries, like requests for bank statements via the phone thus enhancing the levels of customer convenience</td>
<td></td>
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<tr>
<td>6.</td>
<td>Mobile banking relies on multi-tiered security infrastructure, which protects user confidentiality thus boosting security of financial transactions.</td>
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</tbody>
</table>
7. Integration of the mobile banking strategy enables expansion of banking services to remote locations that are not connected by internet but have mobile networks

8. Mobile banking strategy enables commercial banks create a consistent channel of interaction with customers thus enhancing user experience

9. Mobile banking strategy assists the bank achieve facilitate faster communication to customers through notifications on new products and services launched by the commercial banks

10. Mobile banking strategy enables users to have an interaction module where customers can make suggestions or pass complaints regarding services thus enabling banks improve service delivery

11. The speed in mobile transaction gives customers value of time in financial transactions as it enhances time convenience

12. Bank customers are impressed by simpler and ease to use banking processes such as electronic payments, internet banking etc

13. Bank customers are more encouraged if they can easily access credit and emergency loans on their mobile phones whenever they have financial emergencies

14. Mobile money enhances personal financial management in tracking expenditures on transactions such personal purchases and paying different kinds of utility bills

15. The cost of making mobile transactions is very effective in terms of time value thus offering cost convenience and comfort

**SECTION D: ELECTRONIC PAYMENTS STRATEGY**

Please indicate the extent to which you agree with the following statement on the effect of electronic payments strategy on customer service delivery at Barclays Bank of Kenya. Using a scale of 1 – 5 where; 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = disagree, indicate how you Agree/Disagree with the following statements

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<tbody>
<tr>
<td>1.</td>
<td>Electronic payments strategy boosts the prospects of customer convenience as with cards they reduce the need to carry cash</td>
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</tbody>
</table>
which can be inconvenient.

2. Electronic payments strategy makes it possible for bank customers make online purchases and directly pay from their bank accounts giving them incredible convenience.

3. The use of credit and debit cards enable the customers make faster transactions without unnecessary delays.

4. The use of credit and debit cards gives bank customers security for their cash.

5. Electronic payments open the likelihood of the bank customers set expenditure targets by deciding on transaction limits which enhances the prospects of decent financial planning and realization of financial security.

6. Electronic payments are easy to document through examination of expenditure records enabling easier tracking of customer expenses.

7. Electronic payments make it easy to facilitate large scale transactions in a faster way enabling time saving.

8. Electronic payments using global credit and debit cards make it possible for the users to make transactions anywhere in the world as they travel around enhancing customer convenience.

9. Commercial bank customers value the levels of financial security in making cash transactions thus welcome the use of tools that guarantee their transaction security.

10. The credit and debit cards used in transactions are easily replaced incase lost or damaged thus giving customers user convenience.

11. Bank customers are impressed by simpler and ease to use banking processes such as electronic payments, internet banking etc.

12. The use of electronic systems to process electronic payments.
offer bank customers smart financing experience

13. Electronic cards offer flexibility in currency management as a customer travels around the world without need to spend time in making currency exchanges hence enhancing convenience

14. Credit cards offer flexibility in making financial transactions that are urgent in nature and eliminates pressure for need to deposit cash

15. Electronic cards are effective in preventing frauds as they can easily be cancelled remotely incase stolen

SECTION E: AUTOMATED CASH MACHINES STRATEGY

Please indicate the extent to which you agree with the following statement on the effect of automated cash machines on customer service delivery at Barclays Bank of Kenya. Using a scale of 1 – 5 where; 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = disagree, indicate how you Agree/Disagree with the following statements

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<td></td>
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<td>(5)</td>
</tr>
<tr>
<td>1.</td>
<td>Automated cash machines enable faster transactions enabling user convenience in making cash transactions</td>
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<td>2.</td>
<td>Automated cash machines such as PDQ machines enable users to easily make payments in supermarkets, restaurants and clubs eliminating the need for cash boosting user convenience</td>
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<td>3.</td>
<td>The use of electronic machines enable bank customers who run small businesses manage their transactions in a highly organized fashion boosting efficiency</td>
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<td>4.</td>
<td>Automated machines such as ATM’s enable bank customers easily make transactions such as cash withdrawals and deposits reducing eliminating the need to visit bank halls to make similar transactions</td>
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<td>5.</td>
<td>Cash machines like ATM are accessible anytime of the day and night, even on holidays which increase the level of</td>
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<td>convenience to the bank customers</td>
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<td>6.</td>
<td>The use of Automated cash machines in bank halls such as the money counting machines improve on task execution speeds giving bank customers faster services</td>
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<td>7.</td>
<td>The use of Automated cash machines in banking halls, increase the levels of efficiencies in delivering financial services to bank customers</td>
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<td>8.</td>
<td>Automated cash machines such as the digital forensic checkers and counters help in preventing fraud like fake cash, thus protecting financial integrity</td>
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<td>9.</td>
<td>The use of Automated cash machines in banks give bank managers access to tools they can use in making faster and efficient decision on customer service delivery</td>
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<tr>
<td>10.</td>
<td>Bank customers value efficient bank transactions when undertaking banking services</td>
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<td>11.</td>
<td>Automated cash machines are largely conveniently located giving users flexibility in accessing them</td>
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<td>12.</td>
<td>The Automated cash machines with facilities of cash deposits by customers offers great convenience in managing and protecting customers money</td>
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<td>13.</td>
<td>Automated cash machines are efficient in terms of producing instant transaction reports which enable the customers track their financial expenditures</td>
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<td>14.</td>
<td>Automated cash machines are highly simplified hence very easy to use and handle yet equally very highly reliable in facilitating financial transactions</td>
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<td>15.</td>
<td>The Automated cash machines can handle numerous transactions within a short period of time hence integrating speed and efficiencies for users who rely on them in running their businesses.</td>
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Thank you very much for your opinions