EFFECT OF CUSTOMER PERCEPTION ON THE ADOPTION OF MOBILE BANKING IN KENYA

BY

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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)

UNITED STATES INTERNATIONAL UNIVERSITY - AFRICA

SUMMER 2019
STUDENT'S DECLARATION

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

Signed_______________________________ Date___________________

Maore Karimi Lucy (ID No: 627911)

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

Signed_______________________________ Date___________________

Fred Newa

Signed_______________________________ Date___________________

Dean, Chandaria School of Business
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ABSTRACT

This study sought to determine the effect of customer perception on the adoption of mobile banking in Kenya. The study examined the effect of perceived usefulness on the adoption of mobile banking, the effect of perceived risk on the adoption of mobile banking and the effect of trust on the adoption of mobile banking in Kenya.

Descriptive survey research design was used in this research. The study population of this study was M-banking registered customers of 3 banks cutting across all tiers, specifically Kenya Commercial Bank (KCB), State Bank of Mauritius (SBM) and Sidian bank. A target population of 12,437 customers was used. The sampling frame for this study was derived from banks M-banking registered customers and it applied a stratified sampling technique. Using the Yamane (1967) formula, the study made use of a sample size of 388 respondents. The data collection method adopted in the study was primary, and data was collected mainly through administration of pre-tested structured questionnaires. The collected data was first checked for completeness and accuracy then coded before being statistically analyzed using the Microsoft Excel program available in Microsoft office and the Statistical Program for Social Sciences (SPSS). Descriptive statistics in the form of percentages, means and standard deviations were employed during analysis. Inferential statistics in the form of correlation and regression analysis were also used in the study, and the results presented using figures and tables.

The study showed that bank customers use mobile banking applications because it helps them bank better, thus it is beneficial to their personal well-being. Customers use mobile banking because they were told how it works, and because they are willing to adapt new technology, bust most importantly, it does not disrupt their work, while some use mobile banking because their respective banks have invested in mobile banking technology.

The study revealed that the major concern in mobile banking for customers is losing money through transactions, but this insecurity had not deterred them from adopting mobile banking. Mobile banking users normally use one-time passwords when accessing their mobile banking application/ service, even though, they believe that mobile banking has a lot of security and privacy issues, because the security controls for mobile banking are not mature enough.
The study indicated that the use mobile banking services is driven by the ability of the users agreeing to be vulnerable to new technology, as well as, their repeated interactions with the platform. Mobile banking had been driven by the self-efficacy of the users which had increased the users’ confidence in using the mobile banking services. Customers use mobile banking because of the real-time information of services as well as the mobility provided by these services. The provision of personalized information or services provided by mobile banking also facilitates its adoption by consumers.

The study concludes that mobile banking has improved the banking accuracy of users and mobile banking services are easy to use. Most people make use of mobile banking services because they are easily accessible, however, a major concern in mobile banking is being hacked, and the customers believe that, mobile hacking has increased because of mobile banking. Mobile banking users were fearful of someone gaining access to their account by stealing their identity to gain access, and most of them did not use a two-factor authentication process as security.

The study recommends commercial banks to provide customers with vital and complete information about the various mobile banking platforms that exist. In doing so, the banks will be providing users with key awareness information and they can use their employees to advice and show customers how to effectively and efficiently use these applications. This may increase the adoption of these services.
ACKNOWLEDGEMENT

I would first like to thank my research project supervisor Prof. Fred Newa of the Chandaria School of Business at USIU-A. The door to his office was always open whenever I ran into a trouble spot or had a question about my research or writing. He consistently allowed this research study to be my own work, but steered me in the right direction whenever he thought I needed it, and it would not have been complete without his valuable input.
DEDICATION

I would like to thank my entire family for the almost unbelievable support for my pursuit in education and concern in life. You are the most important people in my world and I dedicate this research project report to you.
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<td>Automated Teller Machine</td>
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<td>EA</td>
<td>East Africa</td>
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<tr>
<td>GSM</td>
<td>Global System for Mobile communications</td>
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<td>IPC</td>
<td>Information and Privacy Commissioner</td>
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<td>Information Technology</td>
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<td>NACOSTI</td>
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<td>PDA</td>
<td>Personal Digital Assistant</td>
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<td>PIN</td>
<td>Personal Identification Number</td>
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<td>PU</td>
<td>Perceived Usefulness</td>
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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

The introduction of mobile banking plays a major role in today financial sector as the world revolves around technological innovation (Zhou, 2012). To be viable in the current competitive market, firms analyze consumer’s attitudes and opinions since these have an impact on long term demand and profitability on the business (Iddris, 2013). Recent technological innovations have enabled the launch of new access methods for banking services such as a simple Automated Teller Machine cards (ATM), debit cards, bill pay services, cardless banking, internet banking and mobile banking, whereby a customer interacts with a bank via mobile phone (Singh, 2014).

The move from traditional banking to agency banking and currently mobile banking has made bank products to be more technology based and accessible. With mobile banking, financial market volumes are larger and news travels more quickly than at any time in history (Rose & Hudgins, 2013). Like any other financial market, the banking industry is experiencing a rapid and drastic transformation due to the influence of technology (Zhou, 2012). Compared to how banking was done in the past decades, there is great improvement in the services offered by local banks nowadays. Customer can now access banking services at ease while using mobile banking to make transactions anywhere, anytime (Teo, Chong, Lin & Chua, 2014).

Although customers demand for more refined mobile services, such service has not been very strong. Demand for basic mobile banking is more pronounced compared to the general demand for mobile commerce services (Parasuraman, Zeithaml & Berry, 2010). Banks introduced mobile banking to its customers so that they can enjoy all the benefits of banking with their mobile phones. Customers feel at ease while using mobile banking to make transactions as they have unlimited access to bank services (Ali, 2014). With the advent of mobile banking, this could boost domestic savings, increase money transfers from the diaspora at low costs, and reduce financial transactions costs which leads to low cost of doing business and therefore the overall economy (Kwenyu & Ngare, 2013).
Mobile banking services started to emerge in both developed and developing countries during the early 2000s (Ratten, 2015; Beshouri & Gravrak 2017). This was the newest form of Information Technology (IT)-enabled delivery of banking services to customers. However, adoption patterns have differed between developed and developing countries (Ratten, 2015). Whereas other forms of technology were adopted by developed countries in relatively short timeframes, mobile banking struggled to provide consumers with compelling reasons to adopt the service. In contrast, consumers in developing countries saw mobile banking as a way of connecting to the outside world as well as providing much needed economic gains (Hinson, 2016). The reality was that most nations with advanced infrastructure did not embrace mobile banking as expected due to the information quality, despite the benefits of convenience (Zhou, 2012). The promise of greater mobility from mobile banking had proved to be a disappointment in the developed markets of Europe; the potential for emerging nations was very different and was fueled by the availability and affordability of mobile phones in developing markets (GSM Association, 2012).

While banking through mobile phones emerged from developed countries, the greatest potential of mobile banking was for the poor in developing countries (Ivatury & Pickens, 2012). Consequently, the adoption of mobile banking globally has been faster in developing markets than the uptake of any other modern technology such as television, fixed-line phones and personal computers (GSM Association, 2012). Developing countries were considered to be the most fertile ground for such technology-based services (Zhou, 2012). Mobile banking has had a greater impact in countries with a limited spread of land-wired networks, and consumers seem to have warmed to the possibilities of mobile devices in emerging and poorer markets (GSM Association, 2012). This greater adoption of mobile banking brought a new hope for poorer nations who were consequently able to take greater advantage of new technology than in previous generations (Hinson, 2016).

For instance, a study conducted in South Africa (SA) found that low-income people with bank accounts used their mobile phones to conduct an average 6.6 bank transactions per month, with the highest usage being buying airtime, withdrawing money and paying bills, and serving customers (Ivatury & Pickens, 2012). Supporting the growth of mobile
banking services, Li (2012) suggests that as data transmission speeds improved alongside mobile device capabilities, mobile-phone-based banking also increased in range and flexibility, which in turn brought customer convenience. However, mobile banking has been dogged by factors such as network incompatibility, security weaknesses and device limitations. These factors have led to limited availability and slow uptake of banking applications, resulting in the slow growth of mobile banking services in developed nations (GSM Association, 2012; Li, 2012).

In Ghana, the official unbanked segment of the population is 70%, but the rapid growth in the mobile money industry resulted in the number of registered mobile money customers leaping from 3,303,837 (2013) to 5,424,650 (2014), an increase of 64%. The government passed new mobile money regulations in July 2015, which streamlined transaction flows, collaboration between the mobile money industry and the banking system and the Bank of Ghana (Crabbe, Standing & Karjaluoto, 2015). Competition is tough, with four mobile telecommunication companies operating in the market – Airtel, MTN, Tigo, Vodafone (Iddris, 2013). In November 2015 Vodafone extended M-Pesa to Ghana, adding Ghana as the eleventh M-Pesa market (Crabbe, Standing & Karjaluoto, 2015). These developments are remarkable, given the findings of a study by Dzokoto (2013) indicating a resounding preference for cash and deep mistrust of mobile money in Ghanaian society. A factor that affects the industry adversely though, is the high levels of taxation of the industry in Ghana. Taxes account for almost 25% of the cost of mobile ownership and the $650 million the mobile operators pay in taxes annually constitutes about 40% of total revenue in the sector.

In East Africa (EA), mobile banking has been embraced by a majority of people. In Uganda the communication sector is one of the fastest growing sectors in the economy. The sector was opened to competition in 2007, currently allowing four operators: MTN Uganda, Orange Uganda, Uganda Telecom Limited and Warid Telecom. MTN is the dominant industry player controlling 41% of the mobile market, but there is strong competition from the other operators (Staschen, 2015). There is no legislation governing money services in Uganda, but also no legal provision for third parties delivering financial services of permission to non-banks to issue mobile money without being subject to the full of prudential regulations applicable to banks (Lee, 2014). The Bank of
Uganda found an innovative route around these limitations by requesting mobile money operators to enter into partnerships with banks that had to apply to the Bank of Uganda for a ‘letter of no objection’ to supply mobile money services. By 2015 the statutory position was unchanged in Uganda, which left the Bank of Uganda no alternative but to issue ‘guidelines’ to provide greater clarity to the mobile money industry. The Ugandan mobile market was nevertheless growing – 50% of mobile phone owners made or received regular payments using their phones (Staschen, 2015). Agents are predominantly performing cash-in-cash-out transactions whereas other bank related services such as bill payments and airtime top-ups, saving, credit and insurance transactions are almost non-existent (Lee, 2014).

The growth of mobile banking in the Tanzanian market occurred against the background of the very limited banking services networks in the country. Vodacom partnered with M-Pesa to fill the gap, but the Tanzanian market is an open competitive market with Tigo and Airtel operating as competing mobile service providers (Van der Berg, 2014). The expansion is primarily ascribed to the large number of agents supporting all three service providers. This mobile banking success shows how the Tanzanian society embraced the liberal market as Vodacom doubled its network recently. Vodacom first closed the 2G gap and then moved to become the market leader in 3G service provision in Tanzania (Hinson, 2016). M-Pesa complemented these efforts by securing interconnections with Tanzanian banks, which gave Vodacom access to both the banked and the unbanked sector in the country (Van der Berg, 2014).

In Kenya, there has since been a rapid growth in the adoption of mobile banking by commercial banks and mobile phone service providers in recent years, evidenced by the products and services on offer by these entities (Beshouri & Gravrak, 2017). While banks were struggling to attract more customers to bank with them for quite a while, Safaricom launched the M-Pesa service in 2007 and within a relatively short period it already has more than 10-million users and is providing many poor and rural Kenyans with access to financial services that were previously out of reach, because either banking services were too expensive for them or were almost inaccessible (Zhou, 2012).
With M-Pesa, customer’s money can only be accessed through mobile technology; hence, the banks had to find ways to compete effectively and profitably, and started coming up with their own mobile banking solutions and forming partnerships with these telecommunication service providers (Burns, 2015). For instance, the major products/services provided by banks seen in the media include Barclays Bank of Kenya’s Hello Money, KCB’s Mobi-bank, Co-operative Bank of Kenya’s M-Banking, Equity Bank’s MKesho and Eazzy 247, Family Bank’s Pesa Pap, National Bank’s SIM-ple banking, Commercial Bank of Africa’s M-Shwari just but to mention a few (Mbiti & Weil, 2011). Some of the services being offered include transfer of funds from bank account to mobile phone account like M-Pesa, airtime top-up, change of mobile banking Personal Identification Number (PIN), banking services like account inquiry which includes balance inquiry and mini statement inquiry, funds transfer between accounts both own and other people’s accounts, cheque book request, bill payment and viewing linked accounts (Burns, 2015).

These services are offered in partnership with the telecom companies, the telecoms providing the mobile banking platform and their services embedded in the bank’s mobile banking services as well. For instance, most of the services mentioned above like MKesho and Hello Money are linked to M-Pesa, thus allowing customers to transfer funds from their bank accounts to M-Pesa (Mbiti & Weil, 2011).

1.2 Statement of the Problem
Banks are proving various services to customers in order to retain them as well as become competitive in the emerging Kenya market, based on that, the expectation of the customer has to be found by the banks to make their services better (Beshouri & Gravrak, 2017). The attitude of the customers is varying form period to period based on the up gradation of the technology. Mobile banking that helps the customer to make all the activities of the customer to easily done with in a fraction of a second without waiting for anyone, at the same time the banks have to be dynamic in their technology to satisfy the customers (Hinson, 2016). However, there are underlying consumer factors like perceived usefulness, perceived risk and consumer trust that influence mobile banking adoption.
According to Davis (1993), the acceptance and rejection of technology acceptance can be predicted by using Technology Acceptance Model (TAM) which demonstrates the relationship connecting belief, attitude like use of a certain information system and action purpose like a standard to measure if personnel would use the system. However, Mathieson (2014) argued that it is insufficient to rely only on both constructs of Perceived Usefulness (PU) in investigating user’s technology acceptance. Hsu and Lu (2010), in their study supported that PU did not exactly reflect the acceptance of mobile banking. Hence, Riquelme and Rios (2014) suggested there are other possible factors that might affect mobile banking adoption such as perceived risk, perceived uncertainty, perceived system quality, financial cost, perceived usefulness and perceived ease of use. In view of the different constructs being used, this study focuses on how perceived usefulness influences mobile banking adoption in Kenya.

A study by Rhee and Riggins (2014) showed that confidentiality and privacy is required by the customers while using the mobile banking, the customers have to provide some sensitive information to both telecom operators and banks. To better understand the customer behavior for online mobile banking, Laforet and Li (2015) suggested that security and confidentiality were known as perceived risk and perceived that confidentiality was the most significant determinant that influenced the use of mobile banking. A research made by Muhammad, Hamid, Lada and Anis (2016) suggested that privacy and confidentiality are both important factors under the paradigm of supposed reliability. This excruciating factor of perceived privacy risks that has not been conducted in Kenya, provides a gap that this study intents to fill.

Other than the usefulness and ease of use of mobile banking, trust is considered as a key foundation to gain and maintain customers. Several previous studies (Iddris, 2013; Kwenyu & Ngare, 2013; Lee, 2014) have examined the effect of trust based on TAM. However, these studies either focused on traditional systems like electronic logistics information system or on online activities like online tax system, online shopping (Dzokoto, 2013; Iddris, 2013). Most of these studies took trust as a general construct and did not probe into it. Gefen, Karahanna and Straub (2015) provided insights into this construct and provided a comprehensive view on trust and TAM. Because of differences in technologies and devices, the adoption of wireless-based systems may differ with that
of computer-based systems. Therefore, this study focused on the effect of trust on mobile banking adoption.

Despite these studies offering a rich information base on the mobile banking risks, there is scarcity of empirical evidence about the prevailing issues of perceived usefulness, perceived risk and consumer trust facing mobile banking in commercial banks in Kenya. This denies the banks valuable information for conducting cost benefit analysis for adopting the technology. This study therefore, sought to fill this knowledge gap by examining the effect of customer perception on the adoption of mobile banking in Kenya.

1.3 Purpose of the Study
The purpose of this study was to determine the effect of customer perception on the adoption of mobile banking in Kenya.

1.4 Research Questions
1.4.1 How does perceived usefulness affect the adoption of mobile banking in Kenya?
1.4.2 How does perceived risk affect the adoption of mobile banking in Kenya?
1.4.3 How does trust affect the adoption of mobile banking in Kenya?

1.5 Significance of the Study
1.5.1 Bank Managers
The findings may be significant to the banking industry, particularly KCB, SBM Kenya and Sidian Bank. The data from this study may be utilized in redesigning mobile banking systems to improve customer satisfaction.

1.5.2 Microfinance Institutions
This study may be of significance to microfinance institutions. The study provides managers in these institutions with a clear understanding of the use of mobile banking and the perceived usefulness and security concerns that consumers, and thus, have an opportunity to launch applications that may be of benefit to consumers who would want to adopt their services.
1.5.3 Telecommunication Industry
This research may assist the telecommunication industry to analyze the consumer needs as well as establish the issues facing mobile banking adoption among customers. This study may also be of importance in determining the strategies that the industry may adopt in facilitating mobile banking usage.

1.5.4 Policy Makers
The study may be utilized in directing policy in mobile banking especially in consumer adoption and protection from mobile risks. The study results have provided a clear perception of perceived mobile banking risks in the country, and have provided recommendations that may be adopted in reducing the risks involved.

1.5.5 Academia
This study addressed key gaps such as a literature and research gap. In addition, it addressed a practice gap in the use of mobile banking and the perceived usefulness and security concerns that consumers of mobile banking have. Thus, it has created a foundation that future academicians may utilize.

1.6 Scope of the Study
This study focused on the effect of customer perception on the adoption of mobile banking in Kenya. The study explored how perceived usefulness, perceived risk and trust influence mobile banking within the three identified banks in Kenya that are in Tier 1, 2 and 3 respectively. This allowed for a comprehensive study results in the banking industry. The study covered KCB (Tier 1), SBM Bank (Tier 2), and Sidian Bank (Tier 3). Data collection was done between the months of February 2019 to March 2019.

The study faced limitations in terms of data collection whereby some clients were not willing to participate in the study. To overcome the challenge, the researcher coordinated with bank staff to assure clients that the study was honest and provided clients with an official research letter from the institution, and a government permit from National Commission for Science, Technology and Innovation (NACOSTI), which facilitated the collection of data for the study.
1.7 Definition of Terms

1.7.1 Mobile Banking
Mobile banking is the use of mobile phones and mobile telephony technology to deliver banking services such as deposits, withdrawals, payments, transfers, balance inquiry and many more (Rose & Hudgins, 2013).

1.7.2 Risk
Risk is defined as the possibility of loss or something unpleasant happening because of use or association with a given technology or item (Beshouri & Gravrak, 2017).

1.7.3 Technology Adoption
Technology adoption describes the adoption or acceptance of a new product or innovation, according to the demographic and psychological characteristics of defined adopter groups (Ivatury & Pickens, 2012).

1.7.4 Commercial Banks
According to Rose and Hudgins (2013), commercial banks are financial institutions which provide services such as accepting deposits, making business loans, and offering basic investment products.

1.7.5 Perceived Usefulness
Perceived usefulness is defined as the degree to which a person believes that using a particular system would enhance his/her job performance (Crabbe et al., 2015).

1.7.6 Perceived Risk
Perceived risk is the subjective judgement that people make about the characteristics and severity of a risk (Parasuraman et al., 2010). It can also be defined as the uncertainty a consumer has when buying items or using new technology (Ivatury & Pickens, 2012).

1.7.7 Trust
Trust is defined as the consumers’ belief that the products/services they purchase/use will perform actions that will result in positive outcomes, as well as not take unexpected actions that would result in negative outcomes (Hinson, 2016).
1.8 Chapter Summary

The chapter has laid down the basis for the study. It gives the study background and established the knowledge gap, and presented the objectives of the study. The Chapter further presented the significance of the study, scope of the study and the definition of terms. Chapter two presents the review of existing empirical and theoretical literature on the research questions of the study. Chapter three presents the research design and methodology of the study. Chapter four presents a detailed analysis of the study’s results and findings. Chapter five presents the study’s discussions, conclusions and recommendations based on the findings of the study.
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter provides the literature review for the effect of customer perception on the adoption of mobile banking in Kenya. The chapter discusses in detail the effect of perceived usefulness on the adoption of mobile banking in Kenya, the effect of perceived risk on the adoption of mobile banking in Kenya, and the effect of trust on the adoption of mobile banking in Kenya.

2.2 Perceived Usefulness and Adoption of Mobile Banking

2.2.1 Mobile Banking Adoption

Mobile banking is a financial system which involves access by mobile device to the broader range of banking services that include account-based savings or transactions products offered by banks (Hampshire, 2017). Rogers (2013) defines rate of adoption as the relative speed with which an innovation is adopted by members of the social system. But how given the banking challenges of the brick and mortar? It can be noted that mobile banking is a radical and transformational technological innovation with the potential to alter the complexities of the banking industry. Mobile banking promises to result in increased efficiency, provides access to financial and banking services and indeed creates novel opportunities for improving the lives of the unbanked (de Albuquerque, Diniz & Cernev, 2016).

The adoption of mobile banking has been gradually increasing with the rapid increase in the use of mobile or wireless handsets in the recent past. Studies conducted in the early 2000 showed that European countries including Scandinavian countries, France, United Kingdom (UK), Ireland and Germany, alongside Canada and Japan were among the leaders in mobile banking. In some Asian countries (Singapore and Malaysia) mobile banking penetration was on the increase whereas Australia and New Zealand were among the slow adopters. There was no reference to Africa considering it is a developing continent and mobile banking was still very new in the technology world. However, other studies conducted in mid 2000s showed that mobile banking had grown faster in Sub-Saharan Africa (SSA) than in most other parts of the world within a relatively short time,
and was expected to continue increasing (International Telecommunications Union, 2015).

According to Karjaluoto (2012), the first targets for mobile banking applications were consumers in the developed countries. For users in the developing world on the other hand, the appeal for mobile banking may be less about the convenience and more about accessibility and affordability. Generally, mobile banking systems in the developing world enable users to do three things: store value in an account accessible via the handset, convert cash in and out of the stored value account and transfer stored value between accounts (Njuguna, 2012).

2.2.2 Perceived Usefulness
Perceived usefulness has been characterized as an individual's abstract impression of the capacity of a PC to expand work execution while finishing an undertaking, which influences their apparent value in this way indirectly affecting client's innovation acknowledgment. It is characterized as how much an individual trust that utilizing a specific innovation will improve his or her activity execution (Davis, 2013). In the words of Davis, Bagozzi, and Warshaw (1992), seen handiness alludes to purchasers' observations with respect to the result of an encounter. This follows from the definition of the word “useful” - capable of being used advantageously. A scheme full of perceived usefulness, thus, is one for which a client has faith in the presence of a positive client execution relationship.

Individuals will in general use or not to utilize a framework application to the degree they trust it will enable them to play out their activity better (Davis, Wixom and Todd, 2012). Usefulness can likewise be characterized as the forthcoming adopter's abstract likelihood that applying the new innovation from outside sources will be gainful to his own or potentially the embracing organization's prosperity (Phillips, Richard, Scot and Johnson, 2014). Or on the other hand that utilizing the innovation would improve the manner in which a client could finish a given assignment.

Perceived usefulness discloses the client's recognition to the degree that the innovation will improve the client's working environment execution (Davis et al., 2012). This
implies the client has a view of how helpful the innovation is in playing out his activity errands. This incorporates diminishing the ideal opportunity for carrying out the responsibility, more effectiveness and precision. This study examines in detail the existing relationship between perceived usefulness and the adoption of mobile banking in Kenya.

2.2.3 Relationship between Perceived Usefulness and Mobile Banking Adoption

2.2.3.1 Convenience

In today’s globalized economy and homogenous market offering similar service, greater convenience attributed to the service may enable an organization achieve competitive advantage over its competitors (Amin, 2016). Convenience of a service must be understood within the context of consumers, what they undergo through in the process of utilizing a service (Kaura, 2015). The user of the internet banking service must find it easier to access and use within an internet connection.

According to Kaura (2015), the five dimensions of service convenience are mainly; decision, access, transaction, benefit and post-benefit convenience. Decision convenience refers to the user’s ability to use internet banking anytime whenever they are. Access convenience refers to the ability of the user to easily access the internet banking services. This involves ease of use of the internet banking application and ability to access the service within any geographical location (Muhanj, 2014). Transaction convenience refers to the ability to use internet banking to make various transactions, like purchases, funds transfer, inquiries and purchase bank products among others. Benefit convenience refers to the need satisfaction that is fulfilled from using internet banking. Post-benefit convenience refers to the need satisfaction that is fulfilled after prolonged use of internet banking service (Tarhini, 2016).

2.2.3.2 Perceived Relative Advantage

According to Hampshire (2017), adoption of internet banking and online payment applications arise when consumers identify a perceived relative advantage. If the customer seeks an advantage of time and ease of use, it makes them more adaptable to the usage of the internet banking platform. McNeish (2015) indicated that adaptation to a new idea or product requires need to create awareness either through constructive
advertisement and encouraging consumers to try the product for a trial period. This creates a perceived convenience of use in the minds of the consumers enabling adaptation to internet banking. Persson (2013), indicated that for a new product to be adopted by consumers there is need to ensure that enough awareness of the products efficiency in service delivery. From a business point of view, financial institutions have embraced information communication technology not only to offer quality and efficient service delivery but to aid in profitability (Persson, 2013). This has resulted in commercial banks and financial institutions spending a lot of money in advertising to create awareness of convenience, security and control of their new internet and online based platforms (Malhotra, 2014).

An online payment is a financial exchange between two parties using wireless technology that is supported by the widespread adoption of consumer-based technology together with self-service technology adoption (Hampshire, 2017). While in the past consumers would make a trip to a bank branch or call the bank manager to make transaction, the internet today provides an online platform for banking businesses to automate relationships with customer firms by offering internet banking services to manage, for instance, transactions, customer’s transfers and statements (Rosa, 2016). Online payments require a mobile device to initiate, authorize and/or confirm an exchange of financial value that can replace payments made with cash, cheque or payment (Kaura, 2015). By using internet banking, a customer can easily use it to make payments without really disrupting their work day in order to go to the brick and mortar bank. Furthermore, mobile payments do not restrict themselves to payments via a mobile phone as a mobile payment is based upon a portable device that has the relevant technology with wireless capability to transfer money electronically between two parties perceived usefulness (Nor, 2015).

2.2.3.3 Individual’s Attitude
It has been widely recognized that individual’s attitude has a great impact on his/her use of technology. Eweoya (2016) indicated that an individual’s attitude towards change affects their adoption of new ideas. In the use of technology, age and gender play a role in influencing a customer’s attitude. Previous studies by Amin (2016) and Ayo (2016) have shown that men are more technology savvy and readily willing to adapt to new technology while women take their time in adapting to new technology or systems. The
acceptance, adoption and use of internet banking by Kenyan consumers are regarded as a cornerstone for the success of e-commerce in Kenya (Njuguna, 2012). According to Nor (2015), investment in technology by commercial banks to enhance adoption of internet banking will be considered to be of waste when consumers fail to adopt to the new service delivery platform. Customers need to be ready and actually use the internet banking services for it to be successful. For customer acceptance of internet banking, trained staff in banks should be willing to take them through the platforms and the transition from face to face facilities and to internet banking (Njuguna, 2012).

Acceptance and adoption of internet banking by consumers has become a critical issue in the business world today. Globally, banks have invested heavily on technological advancement to enhance service delivery and gain competitive advantage over their competitors. Furthermore, banks are keen at reducing their operational cost; investing massive resources in providing internet banking platforms to the consumer (Rosa, 2016). According to Ilham (2016), adoption and use of internet banking in developed countries is much higher as compared to developing countries. Ilham (2016) attributed to ease of access to internet services and consumer awareness and knowledgeable on the use of internet banking. In developing countries, adoption of internet banking is quite slow as a result of lack of knowledge on use of the platform, little or no engagement of consumers to adopt to internet banking and poor internet accessibility which makes adoption to the service quite low (Nor, 2015). The main barrier for customer intention to use internet banking services is related to the user habit (Amin, 2016).

2.2.4 Review of Perceived Usefulness and Mobile Banking Adoption

The importance of perceived usefulness has been widely recognized in the field of electronic banking (Guriting & Ndubisi, 2012; Jaruwachirathanakul & Fink, 2015; Eriksson et al., 2015; Polatoglu & Ekin, 2011; Liao & Cheung, 2012). Conferring to them usefulness is the emotional likelihood that utilizing the innovation would improve the manner in which a client could finish a given assignment. Based on theories in social psychology, such as the Theory of Reasoned Action (TRA) (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975) and the Theory of Planned Behavior (TPB) (Ajzen, 1985), the TAM model has been validated as a powerful and parsimonious framework (Davis, 1989). Referring to the TAM, perceived usefulness is how much an individual trust that
utilizing a specific framework would improve his or her activity execution. As indicated by Davis et al. (2012), perceived usefulness alludes to purchasers’ discernments with respect to the result of the experience. Davis (2013) defined perceived usefulness as the individual’s perception that using the new technology will enhance or improve her/his performance. Correspondingly, Mathwick et al. (2014) characterized perceived usefulness as the degree to which an individual considers a specific framework to support his or her activity execution.

Pikkarainen et al. (2014) made use of TAM while in Finland and they found perceived usefulness as a determinant of real conduct which supported the client of the twenty-first century banking to utilize progressively inventive and easy to use self-administration advances that give them more prominent independence in performing banking exchanges, in getting data on money related advices, and in acquiring other monetary items. However, Gerrard and Cunningham (2013) noted that the perceived usefulness depends on the banking services offered such as checking bank balances, applying for a loan, paying utility bills, transferring money abroad, and obtaining information on mutual funds.

There are broad confirmations demonstrating the essentialness of impact of perceived usefulness on consumers intention to adopt technology (Chen & Barnes, 2014; Guriting & Ndubisi, 2012; Jaruwachirathanakul & Fink, 2015; Eriksson et al., 2015; Venkatesh, 2010; Venkatesh & Morris, 2012). Tan and Teo (2010) suggested that the perceived usefulness is an important factor in determining adaptation of innovations. As a consequence, the greater the perceived usefulness of using electronic banking services, the more likely that electronic banking will be adopted (Polatoglu & Ekin, 2011, Jaruwachirathanakul & Fink, 2015).

2.3 Perceived Risk and Adoption of Mobile Banking

2.3.1 Perceived Risk

According to Zhang et al. (2015), the concept of perceived risk was originally established in 1960 by Bauer. He pointed that consumers’ purchase behaviors were likely to lead to hard-to-predict and even unpleasant outcomes. Therefore, consumers’ purchase decision contains the uncertainty of the outcome, which was the initial concept of perceived risk
Lumpkin and Dunn (1990) point out that perceived risk research is one of the very few research areas in consumer behavior, which can properly be said to have a research tradition. Although perceived risk is not the sole explanatory factor of in buyer behavior, it has been established as an integral part of the purchase decision (Lumpkin and Dunn, 1990). Parumasur and Roberts-Lambard (2012) describe perceived risk as the amount of risk that the consumer perceives in the buying decision and or the potential consequences of a poor decision. Thakur and Srivastava (2015) explain that perceived risk is a construct that measures beliefs of the uncertainty regarding possible negative consequences (dangers).

In the domain of consumer behavior, perceived risk has formally been defined as a combination of uncertainty plus seriousness of outcome involved and the expectation of losses associated with purchase and acts as an inhibitor to purchase behavior (Thakur & Srivastava, 2015). Perceived risk refers to the nature and amount of risk perceived by a consumer in contemplating a particular purchase decision (Khan & Chavan, 2015). The most common definition of perceived risk is consumers’ subjective expectations of a loss, which means that any action of a consumer will produce consequences, which he cannot anticipate with anything approximating certainty, and some of which are likely to be unpleasant.

Cunningham (1967) divided perceived risk into two factors: uncertainty and consequence. Uncertainty refers to consumers’ subjective probability of something occurs or not. Consequence is the hazard of the results after decision-making. This view was endorsed by most scholars. Featherman and Pavlou (2013) predicted consumer acceptance level of electronic services from the perspective of perceived risk; their works verified that economic risk, functional risk, psychological risk, social risk, privacy risk and time risk are the six dimensions exist in the internet consumer adoption. This study focuses on how perceived risk influences adoption of mobile banking in Kenyan banks.

2.3.2 Relationship between Perceived Risk and Mobile Banking Adoption

2.3.2.1 Hacking

Unlike malwares where the program is released to collect information or interfere with computer operations, hacking requires an active involvement of a human being. In
simpler terms, malwares are designed to act on behalf of the creator while hackers directly modify or interfere with a computer system. Hence, Farsole, Kashikar and Zunzunwala (2010) define hackers as a person who like to tinker with software or electronic systems. That is, a radical programmer who aggressively explores creative solutions to problems. These programmers may use their talents to subvert criminal activities or for malicious and illegal purposes (Falk, 2014).

Major concerns are on hackers who use their talents for malicious intent. Farsole et al. (2010) posit that organizations are particularly afraid of hackers who break into web servers to replace their logos with pornography, read their e-mails, steal credit card numbers from an on-line shopping site, or implant software that will secretly transmit the organization ‘s secrets to software that will secretly transmit their organization ‘s secrets to the open Internet.

According to Pujitha and Mallu (2013), due to increase in use of mobile banking, chances of mobile hacking for financial benefits have heavily increased with over-the-air mobile data hacking in network path from bank to customer mobile handset including mobile PIN being the major concern. This has been made grave by the fact that hackers have the ability to steal bank information using various techniques in duping mobile phone users to believe that they are communicating with a genuine program from the bank while in reality the user is giving away sensitive information to the hackers (Luvanda, Kimani & Kimwele, 2014).

2.3.2.2 Unauthorized Access
The distinction between hacking and unauthorized access is that the latter involves gaining access to a computer system by improper means while unauthorized access describes gaining access to a computer system using usual means of access but without consent (Morgan, 2015). Unauthorized access includes gaining access to some else’s authentication code and using it to access a system or simply gaining access to a computer system when the user carelessly leaves it logged on. This has mainly been attributed to customers’ widespread use of static passwords which can be guessed, forgotten, written down and stolen, or eavesdropped (Hayikader, Hadi & Ibrahim, 2016).
Customers are particularly worried of their accounts being accessed through their personal account details by way of stolen PIN codes (Mahad, Mohtar, & Othman, 2016). Unauthorized access may also be presented through identity theft where key pieces of someone’s identifying information is acquired through theft in order to impersonate them and commit various crimes in that person’s name (Information and Privacy Commissioner (IPC), 2014). According to Webroot (2014), mobile devices present greater opportunity for identity thieves due to less user authentication during data sharing; more focus on user convenience over user security; easier access to data on compromised mobile devices; ease of account and document access via email or cloud storage; unsafe data transmission over wireless connections and unsecured public Wi-Fi; unsafe data storage of banking PINs, card numbers, and passwords; and data leakage due to poor app coding or authentication that exposes sensitive data to third parties.

Several strategies have been proposed to deal with authorized access when conducting sensitive transactions on mobile devices. Such is the two-factor authentication which require at least two different "factors" before being granted access (Hayikader, Hadi & Ibrahim, 2016). The other methods include one-time passwords used by customers; use of phone or SMS authentication codes; session timeouts after some time; automatic lockouts after set unsuccessful attempts; creation of strong passwords suggested and assisted on by the platform (Musaev & Yousoof, 2015).

2.3.2.3 Security Risk

Security is the biggest challenge facing the mobile banking world. The use of wireless technology creates a risk that information will be stolen, therefore service providers have to employ the use of highly secure encryption technology to prevent third party data intrusion and losses (Mahad et al., 2016). Venable Telecommunications (2008) argue that the ubiquitous tools of mobile banking open the door to enormous potential for monetary as well as reputation risk, hence mobile banking service providers have to provide security which is commensurate with the size of the financial institution as well as the complexity of the products and services offered. The mobility of the mobile handset and the nature of wireless communications make it difficult to authenticate a customer, hence this becomes a security concern as well for both the banks and their customers (Pegueros, 2012).
Ochuma (2014) laments that the major concern in mobile banking is security and banks and vendors need to address this issue more urgently. He argues that the requirement that a customer needs to transact is PIN which does not guarantee that the person transacting is the real card holder. Security and privacy issues are the most complicated challenges that need to be addressed jointly by mobile application developers, wireless network service providers and the banks' IT departments to make users feel more comfortable thereby increasing adoption levels (Venable Telecommunications, 2008).

Consumers’ perception of insecurity has been continuously mentioned as the key deterrent against the adoption of mobile banking. A survey conducted by the Federal Reserve determined that 48% of respondents cited concerns about security as their main reason for not using mobile banking. Additionally, 32% of the respondents rated the security of mobile banking for protecting their personal information as somewhat unsafe and very unsafe, whereas 34% were not sure of the security (Mahad et al., 2016). Pegueros (2012) argues that customers’ perceptions may not necessarily be irrational when you analyze the security risks of mobile banking. She asserts that the relative immaturity of mobile banking brings many inherent risks in the areas of new technologies, new inexperienced entrants in the field and the complex nature of the supply chain. A majority of these new entrants may be innovative and dynamic but have minimal experience or attention to the area of security. Mobile application development, mobile hosting and personal privacy are some of the areas that are prone to the highest risk.

Pegueros (2012), further observes that the security risks associated with mobile devices are very similar to those evident in any other computing device with a few key exceptions namely: that mobile devices have a smaller form factor and therefore are more susceptible to loss or theft; secondly, mobile devices are more personal and there will be a tendency for users to use devices in a more personal and confidential way, and; lastly, the security controls and tools available have not matured to accommodate the constraints of limited processing power and limited battery life.
2.3.3 Review of Perceived Risk and Mobile Banking Adoption

Shin (2015) elucidates that perceived risk is considered a fundamental concept of consumer behavior and is used often to explain customers’ risk perceptions and reduction methods. Perceived risk significantly guides consumer behavior, because people wish to avoid making mistakes (Farzianpour et al., 2014). Lee (2014) is of the view that the magnitude of a perceived risk depends on many factors, such as how important the target is and how serious the possible consequences of a mistake are. Since the outcome of a choice decision can only be known in the future, the consumer is forced to deal with uncertainty and to the extent that consumers realize they may not attain all of their buying goals, risk is perceived (Mieres et al., 2012).

A study conducted by Choi and Lee (2013) has shown that the perception of risk affects a consumer’s propensity to make a buying decision. In this sense, when consumers perceive risks, they assess those risks before making a decision (Weegels & Kanis, 2014). Another study conducted by Hisrich et al. (2012) that focused on perceived risk and retail shopping behavior, examined risk-related variables within the context of selecting a store from which to purchase durable goods. The general conclusion was that perceived risk influences the store selection process of expensive and infrequently purchased items such as furniture.

2.4 Trust and Adoption of Mobile Banking

2.4.1 Trust

According to Belanger and Carter (2016), trust has been explored extensively and defined differently in numerous research studies. Soderstrom (2013) identifies 29 different types of trust, all of which are somewhat different, and relating to each other in a variety of ways. Accordingly, Soderstrom (2013) categorizes trust into three categories of trustee namely, organization, person and technology. For each category, it is further subdivided into two, which are knowledge-based trust and cognitive-based trust which are experienced by the trustor or consumer.

Organization or institution-based trust focuses on relying upon an institution or third party to build trust (Gefen et al., 2015). Person or personality-based trust refers to individual personalities that influence trust building. Technology trust relates to an individual’s
willingness to be vulnerable to an information technology based on expectations of technology predictability, reliability and utility (Lippert & Davis, 2012). Knowledge-based trust which is also known as experienced trust is about trust building through repeated interactions (Gefen et al., 2015).

In other words, the trustor must engage in repeated interaction over a longer period of time with the trustee and in the process, trust is developed. On the other hand, cognitive-based trust which is also termed as initial trust, refers to trust building through first impression rather than repeated interactions (Soderstrom, 2013). This study focuses on the effect of trust in adopting mobile banking in Kenya.

**2.4.2 Relationship between Trust and Mobile Banking Adoption**

**2.4.2.1 Trust Tendency**

Among factors that influence user trust in mobile banking, trust propensity belongs to internal stability factors, specifically contains trust belief and trust stand. The former refers to consumers’ confidence in relying on mobile banking based on the general experience and social cognitive of dealing with banks in the past life; the latter does not change according to different usage scenarios (Hsiu, 2015). It can be expressed as the initial attitude of the individuals with the lack of understanding of the mobile banking system, but must make trust judgment whether to trust (Mcknight & Choudhury, 2012). Usually, individual varies in learning and growth experience and personality characteristics. The user’s disposition to trust which means the consistency trend of being willing to rely on other people or things will be different, specifically manifested as follows: impact of personality traits, role of risk appetite and different use experience (Hsiu, 2015).

Impact of personality traits. Usually Introverted, easy-going and open users express a higher level of trust towards things change, while nerve and conscientious consumers are more sensitive to things, showing a lower level of trust (Tao, 2012). In role of risk appetite, the essence of trust is the users’ willingness to bear risks. Risk-seeking users typically have strong willingness to risk, showing a high degree of trust. On the contrary, risk aversion users usually resist risk (Yan, 2014). They display a low level of trust in the risk environment. In the different use experience, for users, especially those potential
users who have not yet come into contact with mobile banking, some similar experience is an extremely important source of trust (Hsiu, 2015). Individuals will, on the one hand, form the cognition of electronic media according to similar practices such as the use of online banking and telephone banking for payment, on the other hand, can acknowledge the usefulness and entertainment of the mobile phone business through the experience of mobile value-added services, and thus realize the formation of trust on the mobile banking system (Yan, 2014).

2.4.2.2 Consumer Cognition
Cognition-based trust is an important part of consumer trust, which generates from impression on the counterpart in the interpersonal communication. Individual awareness of mobile banking includes two aspects, that is, the availability cognition and the usefulness cognition (Jia, Zhou & Zhu, 2012). Availability cognition. It is the evaluation of the ease of using mobile banking, which is subject to the effects of self-efficacy. Self-efficacy is a subjective judgment or conviction of individuals for their own whether they can take advantage of existing skills to complete a particular activity successfully, which represents the individual’s self-confidence and competence of an activity (Tao, 2012). Generally, consumers will choose environment that they can cope with, while avoid activities beyond their own abilities so that they cannot control or respond to. Therefore, if mobile banking can be able to achieve easy learn, friendly man-machine interaction, and real-time help, customers would think that they have the ability to control, resulting in higher self-efficacy (Mcknight & Choudhury, 2012). This feeling will increase their confidence in using mobile banking, and in turn strengthen the goodwill of mobile banking through confident psychological and form emotional trust. On the contrary, if the function is very cumbersome, users must invest a lot of time and effort to learn. The difficulties would make users cast doubt on their ability, which can reduce self-efficacy and eventually cause self-distrust, so abandon using mobile banking (Benamati & Serva, 2014).

Usefulness cognition. It reflects the improvement of individuals’ life or work quality by using mobile banking system. Mobile banking is built on the basis of wireless network technology (Cheolho, 2009). Its biggest advantage is to provide users with real-time information and ubiquitous services. Users can query and management their capital
accounts at any time and get the latest financial information, thereby reducing the time of customers waiting in line. In addition, using mobile banking can also save transaction costs (Wang, 2014). Data have shown that costs of achieving one offsite transfer business through mobile banking are less than 20% of the business outlets charge; What’s more, through the establishment of online experts, the bank can provide one-on-one answer at all times. At the same time, the bank can offer one-on-one personalized service according to each user’s situation and improve customer added value through active call through the user information they got (Benamati & Serva, 2014).

2.4.2.3 Perceived Benefit

Perceived benefit impact user trust and determine behavior motivation. The prominent benefits of using mobile banking lie in convenience and scenario supply. Traditionally, users should go to the business outlets to accept financial services, which not only has time and position constraints but also have to wait for a particularly long time (Delone & Mclean, 2012). In the online banking environment, users must use fixed equipment such as computers to access to information. As a result, users are limited to a certain geographical location. However, through mobile banking, users can carry mobile devices such as mobile phones, Personal Digital Assistant (PDA), etc. to access to the network and banking system, thereby accept the service at any time in anywhere. This breaks through the restrictions of time and space, greatly improving the living and working efficiency, which has particular attraction for rural local users that are lack of bank outlets and internet is not widespread (Jia, Zhou & Zhu, 2012).

Another advantage of the mobile banking is scenario supply. The bank can provide personalized information or services according to the needs of users, such as mobile location-based services, which is according to the user's geographical location and display nearby ATM network location information on the interface. In addition, the bank could also joint merchant to carry out mobile phone business activities and uses terminal targeting capabilities to provide merchant discount information (Wang, 2014).
2.2.3 Review of Trust and Mobile Banking Adoption

Unlike trust in e-commerce or m-commerce which has been quite extensively researched, studies on trust mobile banking is still very limited. Adapting the Delone and Mclean (2012) model, Lee and Chung (2013) studied factors influencing trust in mobile banking involving 276 consumers in Korea. The findings showed that predictors of trust in mobile banking is information quality, system quality and interface design quality. The findings also suggest that trust is an important predictor to mobile banking satisfaction. In another study also conducted in Korea, it was discovered that situation normality, structural assurance and calculative-based trust are determinants of trust in mobile banking (Gu et al., 2014).

A recent study conducted in China identifies the factors affecting initial trust in mobile banking (Zhou, 2012). The study focuses on the web technology and the mobile banking provider as the trustee. Building upon the information systems success model developed by Delone and Mclean (2012), the study discovered that information quality and systems quality significantly predict initial trust in mobile banking. In addition, it was also found that structural assurance and trust propensity of the trustor significantly predict initial trust. Lin investigated the contribution of knowledge-based trust measured in terms of competence, benevolence and integrity in mobile banking adoption in Taiwan (Lin, 2011). The findings confirmed that all the three knowledge-based trust constructs are predictors of mobile banking adoption.

2.5 Chapter Summary

This chapter has provided the literature review for the effect of customer perception on the adoption of mobile banking in Kenya. The chapter discusses in detail the effect of perceived usefulness on the adoption of mobile banking in Kenya, the effect of perceived risk on the adoption of mobile banking in Kenya, and the effect of consumer trust on the adoption of mobile banking in Kenya. The next chapter presents the research methodology.
CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

This section shows the technique that was utilized to conduct the study. The part has considered in detail the strategies that were utilized to gather any essential or auxiliary information required in the investigation. In this part, the researcher has talked about the research design, target populace, data gathering and analysis. The researcher likewise examined how this information was broken down giving subtleties of any models or measurable systems that were utilized in the study with reasons concerning why these specific models or factual instruments were utilized.

3.2 Research Design

Research design is a general system or an arrangement for examination and coherent model of verification that controls the examiner in the different phases of research (Kothari, 2012). A descriptive survey research design was used in this research. Descriptive research design is a logical strategy which includes watching and depicting the conduct of a subject without affecting it in any capacity, by method for social occasion quantifiable data that can be utilized to measurably break down an intended interest group or a specific subject (Cooper & Schindler, 2015). The primary usage of descriptive research data is to define information or data using numbers. According to Cooper and Schindler (2011), if the study is concerned with the discovery of who, what, where, when, or how much, at that point the examination is descriptive. A descriptive survey is principally about tending to the specific attributes of a particular populace of subjects, either at a fixed point in time or at different occasions for near purposes. Hence descriptive research design was used to examine the existing relationship between customer perception (independent variable) and the adoption of mobile banking (dependent variable) in Kenya.

3.3 Population and Sampling Design

3.3.1 Population

According to Ngechu (2004), a population is a well-characterized or set of individuals, administrations, components, occasions, gathering of things or families that are being explored. This definition guarantees that populace of intrigue is homogeneous. Cooper
and Schindler (2015) have defined population as the total accumulation of components about which one wishes to make a few deductions. The population of this study were M-banking registered customers of three banks that cut across all tiers. These banks were selected by the researcher because they were easily accessible and had allowed the researcher to conduct the study. The specific banks were: KCB, SBM bank and Sidian bank who were 12,437, and were distributed as shown in Table 3.1.

Table 3.1: Population Distribution

<table>
<thead>
<tr>
<th>Bank</th>
<th>Population</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenya Commercial Bank</td>
<td>5326</td>
<td>42.8</td>
</tr>
<tr>
<td>SBM Bank</td>
<td>3874</td>
<td>31.2</td>
</tr>
<tr>
<td>Sidian Bank</td>
<td>3237</td>
<td>26</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12,437</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Bank Data (2019)

3.3.2 Sampling Design

Getting an example include choosing a few components of the populace and utilizing it to make inferences with respect to the whole populace. According to Cooper and Schindler (2011), a decent example should be a delegate of the populace. This examination utilized inspecting for convincing reasons of lower cost, more noteworthy exactness of results, more prominent speed of information accumulation, and accessibility of populace components.

3.3.2.1 Sampling Frame

Cooper and Schindler (2008) define a sample frame as a rundown of components from which the example is really drawn and is firmly identified with the populace. A testing casing could be a rundown of geological zones, establishments, people, or different units included (Churchill & Brown, 2014; Saunders, Lewis & Thornhill, 2012). The sampling frame for this study entailed a list of M-banking registered customers and it was derived from the banks’ data that had a list of registered customers.
3.3.2.2 Sampling Technique

According to Cooper and Schindler, (2011) testing is the way toward choosing a few components from a populace to speak to the populace in general. This study applied a stratified sampling technique. Saunders et al. (2012) define stratified sampling technique as a testing strategy wherein the total populace is partitioned into littler gatherings or strata to finish the inspecting procedure. Churchill and Brown (2014) opine that, the strata are shaped dependent on some normal attributes in the populace information. The method was connected in light of the fact that it encouraged the inclusion of the whole populace relatively and wiped out inclination. The procedure was helpful in encouraging the arrangement of wide-running information.

After separating the population into strata, the researcher randomly selected the sample proportionally. Cooper and Schindler (2011) state that, random sampling is a likelihood examining technique, implying that it depends on the laws of likelihood to choose a sample that can be utilized to make surmising to the populace; this is the premise of measurable trial of criticalness. This strategy was depended upon to guarantee that no predisposition was acquainted with the examination. The study’s strata comprised of the three banks; thus, it was divided between customers of KCB, SBM and Sidian bank as indicated in Table 3.1.

3.3.2.3 Sample Size

A sample size is regularly one that bears some corresponding relationship to the extent of the populace from which it is drawn. All together for the specialist to get a delegate examining size, at that point, the inspecting size must be huge (Cooper & Schindler, 2012). The study employed the Yamane (1967) formula to select the sample size from the population. This was used because it provided a systematic technique of sample collection while ensuring that all factors probability errors and confidence levels were considered during sampling, providing the study with a more accurate sample size. The sample size for the study was therefore, 388 and was obtained and distributed as follows:

\[ n = \frac{N}{1 + N(e)^2} \]
Where:

\[ n = \text{corrected sample size} \]
\[ N = \text{population size} \]
\[ e = \text{Margin of error (0.05) based on the research} \]

Thus:

\[ n = \frac{12,437}{1 + 12,437(0.05)^2} \]
\[ n = \frac{12,437}{32.0925} \]
\[ n = 387.5 \]
\[ n \approx 388 \]

**Table 3.2: Sample Size Distribution**

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<td>26</td>
<td>101</td>
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<tr>
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<td><strong>100</strong></td>
<td><strong>388</strong></td>
</tr>
</tbody>
</table>

**3.4 Data Collection Methods**

The information gathering strategy received in the examination was primary data technique. Primary data was gathered chiefly through organization of pre-tried organized self-administered questionnaires. The self-administered questionnaires were utilized to guarantee that all respondents addressed a similar arrangement of inquiries. This was a perfect apparatus for use since it diminished the occurrence of missing information and low rate of come back from the respondents, as the specialist by and by managed the surveys to the clients.

The survey utilized a 5-point Likert scale. The scale was utilized to encourage the respondents’ capacity to choose the choice that best bolstered their sentiment. The examination utilized the Likert scale since they were straightforward and work with while utilizing quantitative information. They encouraged the analyst’s capacity to effortlessly
reach determinations from the reactions. Moreover, in light of the fact that Likert Scale addresses utilized a scale, respondents were not be compelled to express an either-or assessment, rather, enabling them to be nonpartisan when they picked.

The questionnaire had four parts. The first bit sourced for respondents’ demographics, the second bit touched on perceived usefulness and the adoption of mobile banking, the third bit focused on perceived risk and its effect on the adoption of mobile banking, and the fourth bit focused on consumer trust and its effect the adoption of mobile banking in Kenya.

3.5 Research Procedures
The questionnaire for the study was developed by the researcher as per the research questions. In order to test the soundness of the questionnaire, a pilot test observing to the rudiments confirmed by Cooper and Schindler (2012), who state its significance similar to an apparatus that can be used in order to identify shortcomings in the examination structure and the instruments. In view of the criticism got from the pilot test, the poll was refined and the last form of the survey was appropriated to respondents. The standard Alpha test was applied during the pre-test of the questionnaire. According to Churchill and Brown (2014), the Alpha coefficient of >0.7 is required for 6 and above questionnaire items. However, an Alpha of >0.5 is acceptable for 5 and below questionnaire items. Since the study had 10 questionnaire items per objective, the required threshold for a valid tool was >0.7. The results of the test were as shown in Table 3.3. The table shows that the Cronbach alpha coefficient for mobile banking adoption was 0.831, while that for perceived usefulness and adoption of mobile banking was 0.858, perceived risk and adoption of mobile banking was 0.804 and trust and adoption of mobile banking was 0.806, meaning the tool was reliable.

Table 3.3: Reliability Results

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>Items</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile Banking Adoption</td>
<td>9</td>
<td>.831</td>
</tr>
<tr>
<td>Perceived Usefulness and Adoption of Mobile Banking</td>
<td>10</td>
<td>.858</td>
</tr>
<tr>
<td>Perceived Risk and Adoption of Mobile Banking</td>
<td>10</td>
<td>.804</td>
</tr>
<tr>
<td>Trust and Adoption of Mobile Banking</td>
<td>10</td>
<td>.806</td>
</tr>
</tbody>
</table>
During the data collection period, the randomly selected respondents were given 15 minutes to answer the questionnaire. It was approximated that a questionnaire would take 6 minutes to answer, and thus, doubling the time gave the respondents an ample time. This was applied because the researcher did not have another session of collecting the questionnaires in instances where the respondents would want to respond to the questionnaire at a later time. To ensure a high response rate, the researcher coordinated with bank staff to assure clients that the study was honest and provided clients with an official research letter from the institution, and a government permit from NACOSTI.

3.6 Data Analysis Methods
The gathered information was first checked for culmination and exactness at that point coded before being measurably broke down utilizing the Microsoft Excel program accessible in Microsoft office and the SPSS. The accompanying factual investigation were utilized, frequency tables, figures and percentages. SPSS was employed in the study because it gives a logical strategy for information examination while guaranteeing that the information was precisely and adequately investigated. The tool additionally furnished the analyst with an expansiveness of the two information the board capacities, factual investigation, and illustrations that were comprehensive for the examination.

Descriptive statistics, and specifically measures of central tendencies (frequencies, mean and standard deviations) were used to analyze the Likert questions and presentations were done using tables and figures. Correlation analysis was also used to establish significant factors from the study variables. Regression analysis was used in the form of a simple regressions. The regression was used to examine the level of influence that the independent variables (perceived usefulness, perceived risk and trust) had on the dependent variable (adoption of mobile banking). The regression took the form of:

\[ \gamma = \beta_0 + \beta_1 \chi_1 + \beta_2 \chi_2 + \beta_3 \chi_3 + e; \]

Where: 
\[ \gamma = \text{Dependent Variable} \]
\[ \beta = \text{Y Intercept} \]
\[ \chi_1 = \text{Perceived Usefulness} \]
\[ \chi_2 = \text{Perceived Risk} \]
\[ \chi_3 = \text{Trust} \]
\[ e = \text{Error Term} \]
3.7 Chapter Summary
This part gives a well-ordered technique that were utilized in completing the study. It provides strategies that were utilized to gather any essential or auxiliary information required in the investigation. In this part, the researcher has talked about the research design, target populace, data gathering and analysis. The researcher likewise examined how this information was broken down giving subtleties of any models or measurable systems that were utilized in the study with reasons concerning why these specific models or factual instruments were utilized. Next chapter provides the results and findings of the study.
CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction
This chapter provides the study’s results and findings. These results and findings come from the analyzed data and are being presented by means of tables and figures, and brief descriptions of the numerical tables and figures that have been presented, are also provided. The section was guided by the research questions and the study questionnaire.

4.1.1 Response Rate
The researcher circulated questionnaires to the target population and after collection, data sorting and cleaning was done. After data sorting and cleaning exercise, the researcher was left with 201 valid questionnaires to use from analysis from the 388. This gives the study a response rate of 51.8%. According to Churchill and Brown (2014), when a researcher conducts a study, the minimum required valid response should be 50%. The response rate of the study was 51.8%, and it was above the required threshold.

4.2 Demographics
4.2.1 Gender
Figure 4.1 represents the gender divide of the respondents and it shows that 51.7% who formed the majority were male and 48.3% were female. This indicates that majority of the people frequenting financial institutions are male, however, there is a significant number of females that also visit the banks.

Figure 4.1: Gender
4.2.2 Education

Figure 4.2 denotes the education level of the respondents and it shows that 70.6% had attained university degrees, 29.4% had attained a Master’s degree and none had attained a diploma, PhD or doctorate. This is indicative of the fact that most of the respondents were well educated and could easily understand the set research questions.

Figure 4.2: Education

4.2.3 Banking Institution

Figure 4.3 represents the financial institution that the respondents banked with and it shows that 47.8% had their accounts at KCB, 33.3% had their accounts at SBM and 18.9% had their accounts at Sidian Bank. This is reveals that all the banks had been represented well in the study, and thus the results could be applied to the three financial institutions.

Figure 4.3: Banking Institution
4.2.4 Mobile Banking Usage

Figure 4.4 denotes the usage levels of the respondents and it shows that 53.7% often used mobile banking, 40.8% used mobile banking very often, 3.5% were neutral, 2% rarely used mobile banking and none indicated that they very rarely used mobile banking. This is indicative of the fact that most of the respondents often used mobile banking services making them the best candidates for this study.

![Figure 4.4: Mobile Banking Usage](image)

4.2.5 Preferred Banking Application

Figure 4.5 represents the banking application that was preferred by the respondents and it shows that 37.8% preferred mobile banking applications, 32.3% favored the ATM, 15.4% liked using online banking applications, 10% preferred agency banking, and 4.5% favored using over the counter banking. This indicates that most of the respondents preferred using mobile banking applications, making them best fit for this study.

![Figure 4.5: Preferred Banking Application](image)
4.2.6 Years in Using Mobile Banking

Figure 4.6 represents the number of years the respondents had used mobile banking and it shows that 48.8% had used mobile banking for 1-5 years, 38.3% had used the application for 6-10 years, 12.9% had used it for 11-15 years and none had used it for over 16 years. This indicates that most of the respondents had used mobile banking for more than 6 years, making them best fit for this study.

Figure 4.6: Years in Using Mobile Banking

4.3 Perceived Usefulness and Adoption of Mobile Banking

4.3.1 Scale Rating of Perceived Usefulness and Adoption of Mobile Banking

Table 4.1 presents the scale rating of perceived usefulness questions and the adoption of mobile banking. The table shows that the respondents use mobile banking application because it helps them bank better; this was agreed to by 73.7%, 16.4% were neutral and 10% disagreed (mean 3.83 and standard deviation of 1.087). Respondents use mobile banking because it is beneficial to their personal well-being; this was agreed to by 71.6%, 19.9% were neutral and 8.5% disagreed (mean 3.72 and standard deviation of 0.939).

Mobile banking has improved the respondents’ banking accuracy; this was agreed to by 71.2%, 22.9% were neutral and 6% disagreed (mean 3.85 and standard deviation of 0.923). Respondents find mobile banking services easy to use; this was agreed to by 92.5%, 4% were neutral and 3.5% disagreed (mean 4.39 and standard deviation of 0.728). Respondents use mobile banking because they can access it easily; this was agreed to by 83.1%, 6% were neutral and 11% disagreed (mean 4.10 and standard deviation of 1.151).
Respondents use mobile banking for purchasing items; this was agreed to by 54.8%, 31.3% were neutral and 13.9% disagreed (mean 3.60 and standard deviation of 1.250).

Respondents use mobile banking because they were told how it works (delivers); this was agreed to by 54.7%, 28.4% were neutral and 16.9% disagreed (mean 3.69 and standard deviation of 1.088). Respondents use mobile banking because it does not disrupt their work; this was agreed to by 83.6%, 13.9% were neutral and 2.5% disagreed (mean 4.21 and standard deviation of 0.774). Respondents use mobile banking because they are willing to adapt new technology; this was agreed to by 80.6% and 19.4% were neutral (mean 4.19 and standard deviation of 0.738). Respondents use mobile banking because the bank has invested in mobile banking technology; this was agreed to by 52.7%, 29.4% were neutral and 17.9% disagreed (mean 3.34 and standard deviation of 1.139).

Table 4.1: Scale Rating of Perceived Usefulness and Adoption of Mobile Banking

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
<th>M</th>
<th>StD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I use mobile banking application because it helps me bank better</td>
<td>7.5</td>
<td>2.5</td>
<td>16.4</td>
<td>46.8</td>
<td>26.9</td>
<td>3.83</td>
<td>1.087</td>
</tr>
<tr>
<td>I use mobile banking because it is beneficial to my personal well-being</td>
<td>5.5</td>
<td>3</td>
<td>19.9</td>
<td>57.2</td>
<td>14.4</td>
<td>3.72</td>
<td>.939</td>
</tr>
<tr>
<td>Mobile banking has improved my banking accuracy</td>
<td>3.5</td>
<td>2.5</td>
<td>22.9</td>
<td>48.3</td>
<td>22.9</td>
<td>3.85</td>
<td>.923</td>
</tr>
<tr>
<td>I find mobile banking services easy to use</td>
<td>0</td>
<td>3.5</td>
<td>4</td>
<td>42.3</td>
<td>50.2</td>
<td>4.39</td>
<td>.728</td>
</tr>
<tr>
<td>I use mobile banking because I can access it easily</td>
<td>7.5</td>
<td>3</td>
<td>6</td>
<td>37.3</td>
<td>45.8</td>
<td>4.10</td>
<td>1.151</td>
</tr>
<tr>
<td>I use mobile banking for purchasing items</td>
<td>10.9</td>
<td>3</td>
<td>31.3</td>
<td>24.9</td>
<td>29.9</td>
<td>3.60</td>
<td>1.250</td>
</tr>
<tr>
<td>I use mobile banking because I was told how it works (delivers)</td>
<td>0</td>
<td>16.9</td>
<td>28.4</td>
<td>23.4</td>
<td>31.3</td>
<td>3.69</td>
<td>1.088</td>
</tr>
<tr>
<td>I use mobile banking because it does not disrupt my work</td>
<td>0</td>
<td>2.5</td>
<td>13.9</td>
<td>43.3</td>
<td>40.3</td>
<td>4.21</td>
<td>.774</td>
</tr>
<tr>
<td>I use mobile banking because I am willing to adapt new technology</td>
<td>0</td>
<td>0</td>
<td>19.4</td>
<td>42.3</td>
<td>38.3</td>
<td>4.19</td>
<td>.738</td>
</tr>
<tr>
<td>I use mobile banking because the bank has investment in mobile banking technology</td>
<td>11.9</td>
<td>6</td>
<td>29.4</td>
<td>41.3</td>
<td>11.4</td>
<td>3.34</td>
<td>1.139</td>
</tr>
</tbody>
</table>
4.3.2 Correlations for Perceived Usefulness and Adoption of Mobile Banking

Table 4.2 presents the correlation analysis for perceived usefulness factors (convenience, perceived relative advantage and individual’s attitude) and their significance to the adoption of mobile banking. The table shows that convenience was a significant factor to the adoption of mobile banking ($r=0.248, p<0.01$). Perceived relative advantage was a significant factor to the adoption of mobile banking ($r=0.479, p<0.01$). Individual’s attitude was a significant factor to the adoption of mobile banking ($r=0.466, p<0.01$).

Table 4.2: Correlations for Perceived Usefulness and Adoption of Mobile Banking

<table>
<thead>
<tr>
<th></th>
<th>Mobile Banking Adoption</th>
<th>Convenience</th>
<th>Perceived Relative Advantage</th>
<th>Individual’s Attitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convenience</td>
<td>.248**</td>
<td>1</td>
<td>.510**</td>
<td>1</td>
</tr>
<tr>
<td>Perceived Relative Advantage</td>
<td>.479**</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Individual’s Attitude</td>
<td>.466**</td>
<td>.102</td>
<td>.606**</td>
<td>1</td>
</tr>
</tbody>
</table>

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

4.3.3 Regressions for Perceived Usefulness and Adoption of Mobile Banking

Table 4.3 presents the regression model summary for perceived usefulness and its significance to the adoption of mobile banking. The presented results shown in the table specifies that perceived usefulness accounted for 25.4% influence on adoption of mobile banking.

Table 4.3: Model Summary, Perceived Usefulness and Adoption of Mobile Banking

<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>.508</td>
<td>.258</td>
<td>.254</td>
<td>.45340</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Perceived Usefulness
Table 4.4 presents the analysis of variance (ANOVA) for perceived usefulness and its significance to the adoption of mobile banking. The analysis of variance shown in the table indicates that there was a statistically significant variance between the study variables (perceived usefulness and adoption of mobile banking). The significant F value of 69.173 df (1,199) equals 0.000, meaning that the P value is <0.01 which is indicative of the regression being suitable for this study.

Table 4.4: ANOVA for Perceived Usefulness and Adoption of Mobile Banking

<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>14.220</td>
<td>1</td>
<td>14.220</td>
<td>69.173</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>40.909</td>
<td>199</td>
<td>.206</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>55.130</td>
<td>200</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Perceived Usefulness  
b. Dependent Variable: Adoption of Mobile Banking

Table 4.5 shows the regression coefficients for perceived usefulness and its significance to the adoption of mobile banking. The resulting P value for perceived usefulness is presented as <0.01, which is indicative of the existence of a significant relationship between perceived usefulness and adoption of mobile banking. From the table, a simple regression equation of the existing relationship between perceived usefulness and adoption of mobile banking can be extrapolated as:

\[ \text{Adoption of Mobile Banking} = 2.069 + 0.506 \text{ Perceived Usefulness} + e \]

From this equation, it can be deduced that there is a positive relationship between perceived usefulness and adoption of mobile banking, where every individual unit increase in perceived usefulness will automatically result in a 50.6% increase in mobile banking adoption, whereas, 49.4% may be accounted for by other factors.
Table 4.5: Coefficients for Perceived Usefulness and Adoption of Mobile Banking

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Constant)</td>
<td>2.069</td>
<td>.242</td>
<td>8.534</td>
<td>.000</td>
</tr>
<tr>
<td>Perceived Usefulness</td>
<td>.506</td>
<td>.061</td>
<td>.508</td>
<td>8.317</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Adoption of Mobile Banking

4.4 Perceived Risk and Adoption of Mobile Banking

4.4.1 Scale Rating of Perceived Risk and Adoption of Mobile Banking

Table 4.6 presents the scale rating of perceived risk questions and the adoption of mobile banking. The table shows that the major concern in mobile banking is losing money through transactions; this was agreed to by 43.8%, 25.9% were neutral and 30.3% disagreed (mean 3.20 and standard deviation of 1.330). The respondents’ insecurity had not deterred their adoption of mobile banking; this was disagreed to by 73.7%, 15.4% were neutral and 11% agreed (mean 1.96 and standard deviation of 1.104). The respondents’ major concern in mobile banking is being hacked; this was agreed to by 59.7%, 16.4% were neutral and 23.9% disagreed (mean 3.49 and standard deviation of 1.179). The respondents believe mobile hacking has increased because of mobile banking; this was agreed to by 58.2%, 19.9% were neutral and 21.9% disagreed (mean 3.49 and standard deviation of 1.158).

The respondents were fearful of someone gaining access to their mobile banking code (PIN); this was agreed to by 62.7%, 11.9% were neutral and 25.3% disagreed (mean 3.58 and standard deviation of 1.398). The respondents were fearful of someone stealing their identity to gain access to their bank account; this was agreed to by 62.6%, 23.9% were neutral and 13.5% disagreed (mean 3.77 and standard deviation of 1.100). The respondents normally did not use a two-factor authentication process when accessing my mobile banking application/service; this was disagreed to by 53.3%, 22.4% were neutral and 24.4% agreed (mean 2.60 and standard deviation of 1.349). The respondents normally use one-time passwords when accessing my mobile banking application/service; this was agreed to by 58.7%, 6.5% were neutral and 34.9% disagreed (mean 3.41 and standard deviation of 1.339). The respondents believe that mobile banking has a lot of security and
privacy issues; this was agreed to by 50.8%, 39.8% were neutral and 9.5% disagreed (mean 3.59 and standard deviation of 0.997). The respondents believe that the security controls for mobile banking are not mature enough; this was agreed to by 36.3%, 40.8% were neutral and 22.9% disagreed (mean 3.25 and standard deviation of 1.139).

Table 4.6: Scale Rating of Perceived Risk and Adoption of Mobile Banking

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
<th>M</th>
<th>Std</th>
</tr>
</thead>
<tbody>
<tr>
<td>My major concern in mobile banking is losing money through transactions</td>
<td>14.4</td>
<td>15.9</td>
<td>25.9</td>
<td>22.9</td>
<td>20.9</td>
<td>3.20</td>
<td>1.330</td>
</tr>
<tr>
<td>My insecurity has deterred my adoption of mobile banking</td>
<td>44.8</td>
<td>28.9</td>
<td>15.4</td>
<td>7.5</td>
<td>3.5</td>
<td>1.96</td>
<td>1.104</td>
</tr>
<tr>
<td>My major concern in mobile banking is being hacked</td>
<td>6.5</td>
<td>17.4</td>
<td>16.4</td>
<td>39.8</td>
<td>19.9</td>
<td>3.49</td>
<td>1.179</td>
</tr>
<tr>
<td>I believe mobile hacking has increased because of mobile banking</td>
<td>6.5</td>
<td>15.4</td>
<td>19.9</td>
<td>38.8</td>
<td>19.4</td>
<td>3.49</td>
<td>1.158</td>
</tr>
<tr>
<td>Am fearful of someone gaining access to my mobile banking code (PIN)</td>
<td>12.9</td>
<td>12.4</td>
<td>11.9</td>
<td>28.9</td>
<td>33.8</td>
<td>3.58</td>
<td>1.398</td>
</tr>
<tr>
<td>Am fearful of someone stealing my identity to gain access to my bank account</td>
<td>3.5</td>
<td>10</td>
<td>23.9</td>
<td>31.8</td>
<td>30.8</td>
<td>3.77</td>
<td>1.10</td>
</tr>
<tr>
<td>I normally use a two-factor authentication process when accessing my mobile banking application/service</td>
<td>25.4</td>
<td>27.9</td>
<td>22.4</td>
<td>10</td>
<td>14.4</td>
<td>2.60</td>
<td>1.349</td>
</tr>
<tr>
<td>I normally use one-time passwords when accessing my mobile banking application/service</td>
<td>8.5</td>
<td>26.4</td>
<td>6.5</td>
<td>33.3</td>
<td>25.4</td>
<td>3.41</td>
<td>1.339</td>
</tr>
<tr>
<td>I believe that mobile banking has a lot of security and privacy issues</td>
<td>3.5</td>
<td>6</td>
<td>39.8</td>
<td>29.9</td>
<td>20.9</td>
<td>3.59</td>
<td>.997</td>
</tr>
<tr>
<td>I believe that the security controls for mobile banking are not mature enough</td>
<td>7</td>
<td>15.9</td>
<td>40.8</td>
<td>17.9</td>
<td>18.4</td>
<td>3.25</td>
<td>1.139</td>
</tr>
</tbody>
</table>
4.4.2 Correlations for Perceived Risk and Adoption of Mobile Banking

Table 4.7 presents the correlation analysis for perceived risk factors (hacking, unauthorized access and security risk) and their significance to the adoption of mobile banking. The table shows that hacking was a significant factor to the adoption of mobile banking (r=0.310, p<0.01). Unauthorized access was a significant factor to the adoption of mobile banking (r=0.162, p<0.05). Security risk was an insignificant factor to the adoption of mobile banking (r=0.106, p>0.05).

<table>
<thead>
<tr>
<th>Mobile Banking Adoption</th>
<th>Unauthorized Access</th>
<th>Security Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile Banking Adoption</td>
<td>1</td>
<td>Hacking</td>
</tr>
<tr>
<td>Hacking</td>
<td>.310**</td>
<td>Unauthorized Access</td>
</tr>
<tr>
<td></td>
<td>.000</td>
<td>.021</td>
</tr>
<tr>
<td>Unauthorized Access</td>
<td>.162*</td>
<td>.292**</td>
</tr>
<tr>
<td></td>
<td>.093</td>
<td>-.043</td>
</tr>
<tr>
<td>Security Risk</td>
<td>.106</td>
<td>.133</td>
</tr>
<tr>
<td></td>
<td>.043</td>
<td>.541</td>
</tr>
</tbody>
</table>

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

4.4.3 Regressions for Perceived Risk and Adoption of Mobile Banking

Table 4.8 presents the regression model summary for perceived risk and its significance to the adoption of mobile banking. The presented results shown in the table specifies that perceived risk accounted for 15.2% influence on adoption of mobile banking.

<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>.395</td>
<td>.156</td>
<td>.152</td>
<td>.48352</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Perceived Risk

Table 4.9 presents the analysis of variance (ANOVA) for perceived risk and its significance to the adoption of mobile banking. The analysis of variance shown in the
Table 4.9: ANOVA for Perceived Risk and Adoption of Mobile Banking

<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>8.605</td>
<td>1</td>
<td>8.605</td>
<td>36.805</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>46.525</td>
<td>199</td>
<td>.234</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>55.130</td>
<td>200</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Perceived Risk  
b. Dependent Variable: Adoption of Mobile Banking

Table 4.10 shows the regression coefficients for perceived risk and its significance to the adoption of mobile banking. The resulting P value for perceived risk is presented as <0.01, which is indicative of the existence of a significant relationship between perceived risk and adoption of mobile banking. From the table, a simple regression equation of the existing relationship between perceived risk and adoption of mobile banking can be extrapolated as:

\[
\text{Adoption of Mobile Banking} = 3.040 + 0.264 \text{ Perceived Risk} + e
\]

From this equation, it can be deduced that there is a positive relationship between perceived risk and adoption of mobile banking, where every individual unit increase in perceived risk will automatically result in a 26.4% increase in mobile banking adoption, whereas, 73.6% may be accounted for by other factors.

Table 4.10: Coefficients for Perceived Risk and Adoption of Mobile Banking

<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>3.040</td>
<td>.173</td>
<td>.173</td>
<td>17.572</td>
</tr>
<tr>
<td>Perceived Risk</td>
<td>.264</td>
<td>.043</td>
<td>.395</td>
<td>6.067</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Adoption of Mobile Banking
4.5 Trust and Adoption of Mobile Banking

4.5.1 Scale Rating of Trust and Adoption of Mobile Banking

Table 4.11 presents the scale rating of perceived usefulness questions and the adoption of mobile banking. Respondents use mobile banking because of their ability to be vulnerable to new technology; this was agreed to by 46.3%, 33.3% were neutral and 20.4% disagreed (mean 3.30 and standard deviation of 0.938). Respondents use mobile banking because of their repeated interactions with the platform; this was agreed to by 85.1%, 6.5% were neutral and 8.5% disagreed (mean 4.01 and standard deviation of 0.809).

Respondents built their trust in mobile banking through their first impression of the service; this was agreed to by 80.6%, 16.4% were neutral and 3% disagreed (mean 4.07 and standard deviation of 0.869). Respondents use mobile banking because of its usefulness in their day-to-day service; this was agreed to by 97.5% and 2.5% were neutral (mean 4.43 and standard deviation of 0.545).

Respondents use mobile banking because of mobile value-added services it provides; this was agreed to by 78.1%, 12.9% were neutral and 9% disagreed (mean 4.07 and standard deviation of 0.932). Respondents use mobile banking because of their self-efficacy (ability to use mobile banking applications); this was agreed to by 78.6%, 13.9% were neutral and 7.5% disagreed (mean 4.08 and standard deviation of 0.994).

Respondents’ self-efficacy has increased their confidence in mobile banking usage; this was agreed to by 80.6%, 16.9% were neutral and 2.5% disagreed (mean 4.11 and standard deviation of 0.769). Respondents use mobile banking because of the real-time information of services; this was agreed to by 80.6%, 14.4% were neutral and 5% disagreed (mean 4.18 and standard deviation of 0.944).

Respondents use mobile banking because of the mobility of banking it has provided; this was agreed to by 83.6%, 10.9% were neutral and 5.5% disagreed (mean 4.17 and standard deviation of 0.884). Respondents use mobile banking because of the personalized information or services it provides; this was agreed to by 87%, 10% were neutral and 3% disagreed (mean 4.20 and standard deviation of 0.737).
Table 4.11: Scale Rating of Trust and Adoption of Mobile Banking

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
<th>M</th>
<th>Std</th>
</tr>
</thead>
<tbody>
<tr>
<td>I use mobile banking because of my ability to be vulnerable to new technology</td>
<td>3</td>
<td>17.4</td>
<td>33.3</td>
<td>39.3</td>
<td>7</td>
<td>3.30</td>
<td>.938</td>
</tr>
<tr>
<td>I use mobile banking because of my repeated interactions with the platform</td>
<td>0</td>
<td>8.5</td>
<td>6.5</td>
<td>60.2</td>
<td>24.9</td>
<td>4.01</td>
<td>.809</td>
</tr>
<tr>
<td>I built my trust in mobile banking through my first impression of the service</td>
<td>3</td>
<td>0</td>
<td>16.4</td>
<td>48.3</td>
<td>32.3</td>
<td>4.07</td>
<td>.869</td>
</tr>
<tr>
<td>I use mobile banking because of its usefulness in my day-to-day service</td>
<td>0</td>
<td>0</td>
<td>2.5</td>
<td>51.7</td>
<td>45.8</td>
<td>4.43</td>
<td>.545</td>
</tr>
<tr>
<td>I use mobile banking because of mobile value-added services it provides</td>
<td>0</td>
<td>9</td>
<td>12.9</td>
<td>39.8</td>
<td>38.3</td>
<td>4.07</td>
<td>.932</td>
</tr>
<tr>
<td>I use mobile banking because of my self-efficacy (ability to use mobile banking applications)</td>
<td>3</td>
<td>4.5</td>
<td>13.9</td>
<td>38.3</td>
<td>40.3</td>
<td>4.08</td>
<td>.994</td>
</tr>
<tr>
<td>My self-efficacy has increased my confidence in mobile banking usage</td>
<td>0</td>
<td>2.5</td>
<td>16.9</td>
<td>47.3</td>
<td>33.3</td>
<td>4.11</td>
<td>.769</td>
</tr>
<tr>
<td>I use mobile banking because of the real-time information of services</td>
<td>2.5</td>
<td>2.5</td>
<td>14.4</td>
<td>35.3</td>
<td>45.3</td>
<td>4.18</td>
<td>.944</td>
</tr>
<tr>
<td>I use mobile banking because of the mobility of banking it has provided</td>
<td>1.5</td>
<td>4</td>
<td>10.9</td>
<td>43.3</td>
<td>40.3</td>
<td>4.17</td>
<td>.884</td>
</tr>
<tr>
<td>I use mobile banking because of the personalized information or services it provides</td>
<td>0</td>
<td>3</td>
<td>10</td>
<td>50.7</td>
<td>36.3</td>
<td>4.20</td>
<td>.737</td>
</tr>
</tbody>
</table>

4.5.2 Correlations for Trust and Adoption of Mobile Banking

Table 4.12 presents the correlation analysis for trust factors (trust tendency, consumer cognition and perceived benefit) and their significance to the adoption of mobile banking. The table shows that trust tendency was a significant factor to the adoption of mobile banking (r=0.183, p<0.01). Consumer cognition was a significant factor to the adoption of
mobile banking ($r=0.380$, $p<0.01$). Perceived benefit was a significant factor to the adoption of mobile banking ($r=0.337$, $p<0.01$).

**Table 4.12: Correlations for Trust and Adoption of Mobile Banking**

<table>
<thead>
<tr>
<th></th>
<th>Mobile Banking Adoption</th>
<th>Trust Tendency</th>
<th>Consumer Cognition</th>
<th>Perceived Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile Banking Adoption</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust Tendency</td>
<td>.183**</td>
<td>1</td>
<td></td>
<td>.009</td>
</tr>
<tr>
<td>Consumer Cognition</td>
<td>.380**</td>
<td>.629**</td>
<td>1</td>
<td>.000</td>
</tr>
<tr>
<td>Perceived Benefit</td>
<td>.337**</td>
<td>.457**</td>
<td>.608**</td>
<td>1</td>
</tr>
</tbody>
</table>

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

### 4.5.3 Regressions for Trust and Adoption of Mobile Banking

Table 4.13 presents the regression model summary for trust and its significance to the adoption of mobile banking. The presented results shown in the table specifies that trust accounted for 7.5% influence on adoption of mobile banking.

**Table 4.13: Model Summary, Trust and Adoption of Mobile Banking**

<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>.281</td>
<td>.079</td>
<td>.075</td>
<td>.50506</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Trust

Table 4.14 presents the analysis of variance (ANOVA) for trust and its significance to the adoption of mobile banking. The analysis of variance shown in the table indicates that there was a statistically significant variance between the study variables (trust and adoption of mobile banking). The significant F value of 17.118 df (1,199) equals 0.000, meaning that the P value is <0.01 which is indicative of the regression being suitable for this study.
Table 4.14: ANOVA for Trust and Adoption of Mobile Banking

<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>4.367</td>
<td>1</td>
<td>4.367</td>
<td>17.118</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>50.763</td>
<td>199</td>
<td>.255</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>55.130</td>
<td>200</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Trust
b. Dependent Variable: Adoption of Mobile Banking

Table 4.15 shows the regression coefficients for trust and its significance to the adoption of mobile banking. The resulting P value for trust is presented as <0.01, which is indicative of the existence of a significant relationship between trust and adoption of mobile banking. From the table, a simple regression equation of the existing relationship between trust and adoption of mobile banking can be extrapolated as:

$$\text{Adoption of Mobile Banking} = 3.111 + 0.242 \text{Trust} + e$$

From this equation, it can be deduced that there is a positive relationship between trust and adoption of mobile banking, where every individual unit increase in trust will automatically result in a 24.2% increase in mobile banking adoption, whereas, 75.8% may be accounted for by other factors.

Table 4.15: Coefficients for Trust and Adoption of Mobile Banking

<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>3.111</td>
<td>.234</td>
<td>.281</td>
<td>13.278</td>
</tr>
<tr>
<td>Trust</td>
<td>.242</td>
<td>.059</td>
<td>.281</td>
<td>4.137</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Adoption of Mobile Banking

4.5.4 Correlations for Customer Perception and Adoption of Mobile Banking

Table 4.16 presents the correlation analysis for customer perception factors (perceived usefulness, perceived risk and trust) and their significance to the adoption of mobile banking. The table shows that perceived usefulness was a significant factor to the
adoption of mobile banking (r=0.508, p<0.01). Perceived risk was a significant factor to the adoption of mobile banking (r=0.395, p<0.01). Trust was a significant factor to the adoption of mobile banking (r=0.281, p<0.01).

Table 4.16: Correlations for Customer Perception and Adoption of Mobile Banking

<table>
<thead>
<tr>
<th>Mobile Banking Adoption</th>
<th>Perceived Usefulness</th>
<th>Perceived Risk</th>
<th>Trust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile Banking Adoption</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Usefulness</td>
<td>.508**</td>
<td>1</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Risk</td>
<td>.395**</td>
<td>.058</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>.000</td>
<td>.410</td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>.281**</td>
<td>.232**</td>
<td>.415**</td>
</tr>
<tr>
<td></td>
<td>.000</td>
<td>.001</td>
<td>.000</td>
</tr>
</tbody>
</table>

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

4.5.3 Regressions for Consumer Perception and Adoption of Mobile Banking

Table 4.17 presents the regression model summary for customer perception factors (perceived usefulness, perceived risk and trust) and their significance to the adoption of mobile banking. The presented results shown in the table specifies that perceived usefulness, perceived risk and trust accounted for 38.3% influence on adoption of mobile banking.

Table 4.17: Model Summary, Consumer Perception & Adoption of Mobile Banking

<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>.626</td>
<td>.392</td>
<td>.383</td>
<td>.41240</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Perceived Usefulness, Perceived Risk, Trust

Table 4.18 presents the analysis of variance (ANOVA) for customer perception factors (perceived usefulness, perceived risk and trust) and their significance to the adoption of mobile banking. The analysis of variance shown in the table indicates that there was a statistically significant variance between the study variables (consumer perception factors and adoption of mobile banking). The significant F value of 42.383 df (3,197) equals
0.000, meaning that the P value is <0.01 which is indicative of the regression being suitable for this study.

Table 4.18: ANOVA for Consumer Perception and Adoption of Mobile Banking

<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>21.625</td>
<td>3</td>
<td>7.208</td>
<td>42.383</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>33.505</td>
<td>197</td>
<td>.170</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>55.130</td>
<td>200</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Perceived Usefulness, Perceived Risk, Trust
b. Dependent Variable: Adoption of Mobile Banking

Table 4.19 shows the regression coefficients for customer perception factors (perceived usefulness, perceived risk and trust) and their significance to the adoption of mobile banking. The resulting P value for perceived usefulness and perceived risk are presented as <0.01, which is indicative of the existence of a significant relationship between perceived usefulness and perceived risk and adoption of mobile banking. However, the resulting P value for trust is presented as >0.05, which is indicative of the existence of an insignificant relationship between trust and adoption of mobile banking. From the table, a simple regression equation of the existing relationship between customer perception factors and adoption of mobile banking can be extrapolated as:

\[
\text{Adoption of Mobile Banking} = 1.166 + 0.481 \text{ Perceived Usefulness} + 0.239 \text{ Perceived Risk} + 0.018 \text{ Trust} + e
\]

From this equation, it can be deduced that there is a positive relationship between perceived usefulness and adoption of mobile banking, where every individual unit increase in perceived usefulness will automatically result in a 48.1% increase in mobile banking adoption. There is a positive relationship between perceived risk and adoption of mobile banking, where every individual unit increase in perceived risk will automatically result in a 23.9% increase in mobile banking adoption. There is a positive relationship between trust and adoption of mobile banking, where every individual unit increase in trust will automatically result in a 1.8% increase in mobile banking adoption.
Table 4.19: Coefficients for Consumer Perception and Adoption of Mobile Banking

<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>(Constant)</td>
<td>1.166</td>
<td>.275</td>
<td>4.249</td>
<td>.000</td>
</tr>
<tr>
<td>Perceived Usefulness</td>
<td>.481</td>
<td>.057</td>
<td>8.434</td>
<td>.000</td>
</tr>
<tr>
<td>Perceived Risk</td>
<td>.239</td>
<td>.041</td>
<td>5.862</td>
<td>.000</td>
</tr>
<tr>
<td>Trust</td>
<td>.018</td>
<td>.054</td>
<td>.338</td>
<td>.736</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Adoption of Mobile Banking

4.6 Chapter Summary
This chapter has provided the study’s results and findings. These results and findings came from the analyzed data and have been presented by means of tables and figures, and brief descriptions of the numerical tables and figures have also been offered. The chapter was guided by the research questions and the study questionnaire. The next chapter is the discussions, conclusions and recommendations of the study.
CHAPTER FIVE
5.0 DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction
This chapter provides the study summary, discussions, conclusions and recommendations for effect of customer perception on the adoption of mobile banking in Kenya. All this is based on the results and findings of the study that were guided by the research questions. Recommendations have been provided for improvement and those for further studies that may fill the gaps left by this particular study.

5.2 Summary
This study sought to determine the effect of customer perception on the adoption of mobile banking in Kenya. The study examined the effect of perceived usefulness on the adoption of mobile banking, the effect of perceived risk on the adoption of mobile banking and the effect of trust on the adoption of mobile banking in Kenya.

Descriptive survey research design was used in this research. The study population of this study was M-banking registered customers of 3 banks cutting across all tiers, specifically KCB, SBM bank and Sidian bank. A target population of 12,437 customers was used. The sampling frame for this study was derived from banks M-banking registered customers and it applied a stratified sampling technique. Using the Yamane (1967) formula, the study made use of a sample size of 388 respondents. The data collection method adopted in the study was primary, and data was collected mainly through administration of pre-tested structured questionnaires. The collected data was first checked for completeness and accuracy then coded before being statistically analyzed using the Microsoft Excel program available in Microsoft office and the SPSS. Descriptive statistics in the form of percentages, means and standard deviations were employed during analysis. Inferential statistics in the form of correlation and regression analysis were also used in the study, and the results presented using figures and tables.

The study showed that bank customers use mobile banking applications because it helps them bank better, thus it is beneficial to their personal well-being. Mobile banking has improved the banking accuracy of users and mobile banking services are easy to use. Most people make use of mobile banking services because they are easily accessible, thus
they can use the services to purchase goods and services. Customers use mobile banking because they were told how it works, and because they are willing to adapt new technology, but most importantly, it does not disrupt their work, while some use mobile banking because their respective banks have invested in mobile banking technology.

The study revealed that the major concern in mobile banking for customers is losing money through transactions, but this insecurity had not deterred them from adopting mobile banking. Another major concern in mobile banking is being hacked, and the customers believe that, mobile hacking has increased because of mobile banking. Mobile banking users were fearful of someone gaining access to their mobile PIN or someone stealing their identity to gain access to their bank account fraudulently, because most if not all of them did not use a two-factor authentication process when accessing their mobile banking application or service. Mobile banking users normally use one-time passwords when accessing their mobile banking application/service, even though, they believe that mobile banking has a lot of security and privacy issues, because the security controls for mobile banking are not mature enough.

The study indicated that the use mobile banking services is driven by the ability of the users agreeing to be vulnerable to new technology, as well as, their repeated interactions with the platform. Customers built their trust in mobile banking through their first impression of the service and interact with the service because of its usefulness in the day-to-day service, and the value it adds and provides for users. Mobile banking had been driven by the self-efficacy of the users which had increased the users’ confidence in using the mobile banking services. Customers use mobile banking because of the real-time information of services as well as the mobility provided by these services. The provision of personalized information or services provided by mobile banking also facilitates its adoption by consumers.

5.3 Discussions
5.3.1 Perceived Usefulness and Adoption of Mobile Banking
The study showed that customers used mobile banking application because it helped them bank better. Diniz et al. (2013) provide support for this result by indicating that mobile banking promises to result in increased efficiency, provides access to financial and
banking services and indeed creates novel opportunities for improving the lives of the unbanked. The study indicated that customers used mobile banking because it was beneficial to their personal well-being. Remarks made by Phillips et al. (2014) agree with the study result that, usefulness can also be defined as the prospective adopter’s subjective probability that applying the new technology from foreign sources will be beneficial to his personal and/or the adopting company’s well-being.

The study revealed that mobile banking had improved the customers’ banking accuracy. Davis et al. (2012) gives backing to the study result by stating that, perceived usefulness explains the user’s perception to the extent that the technology will improve the user’s workplace performance, and it may include increasing decreasing the time for doing the job, and increasing efficiency and accuracy. The study showed that customers found mobile banking services easy to use. Hampshire (2017) found similar observations to the study result, where, adoption of internet banking and online payment applications arise when consumers identify a perceived relative advantage. If the customer seeks an advantage of time and ease of use, it makes them more adaptable to the usage of the internet banking platform.

Results from the study showed that customers used mobile banking because they can access it easily. The results are in agreement with Muhanji’s (2014) results that showed, access convenience refers to the ability of the user to easily access the internet banking services, which involves ease of use of the internet banking application and ability to access the service within any geographical location. The study showed that customers used mobile banking for purchasing items. The results are in agreement with Tarhini’s (2016) results that showed, transaction convenience refers to the ability to use internet banking to make various transactions, like purchases, funds transfer, inquiries and purchase bank products among others.

The study revealed that customers used mobile banking because they were told how it works (delivers). Persson (2013) supports the study results by stating that, for a new product to be adopted by consumers there is need to ensure that enough awareness of the products efficiency in service delivery. The study indicated that customers used mobile banking because it did not disrupt their work. Nor’s (2015) result provides support for
this study results by indicating that, through the use of internet banking, a customer can easily use it to make payments without really disrupting their work day in order to go to the brick and mortar bank.

The study showed that customers used mobile banking because they were willing to adapt new technology. Studies by Amin (2016) and Ayo (2016) provide similarity to the findings of the study by showing that men are more technology savvy and readily willing to adapt to new technology while women take their time in adapting to new technology or systems. The study revealed that customers used mobile banking because the bank had invested in mobile banking technology. Rosa (2016) supports the findings of the study results by indicating that, globally, banks have invested heavily on technological advancement to enhance service delivery and gain competitive advantage over their competitors.

5.3.2 Perceived Risk and Adoption of Mobile Banking

The study showed that the major concern in mobile banking for customers was losing money through transactions. Featherman and Pavlou (2013) confirm the study results by predicting consumer acceptance level of electronic services from the perspective of perceived risk i.e. economic risk, functional risk, psychological risk, social risk and privacy risk. The study indicated that customers’ major concern in mobile banking was being hacked. Similar results were stated by Farsole et al. (2010) who noted that, major concerns are on hackers who use their talents for malicious intent, particularly hackers who steal credit card numbers from an on-line shopping site.

The study revealed that customers believed mobile hacking had increased because of mobile banking. This study results were also confirmed by Pujitha and Mallu (2013) who state that, due to increase in use of mobile banking, chances of mobile hacking for financial benefits have heavily increased with over-the-air mobile data hacking. The study indicated that customers were fearful of someone gaining access to their mobile banking PIN. The results of this study were also confirmed by Mahad et al. (2016) who state that, customers are particularly worried of their accounts being hacked and accessed through their personal account details by way of stolen PIN codes.
The study showed that customers were fearful of someone stealing their identity to gain access to their bank account. This result is confirmed by IPC (2014) who note that, unauthorized access may be presented through identity theft where key pieces of someone’s identifying information is acquired through theft in order to impersonate them and commit various crimes. The study results proved that mobile banking customers normally did not use a two-factor authentication process when accessing their mobile banking application/service.

This study result does not agree with Hayikader et al. (2016) who noticed that, several strategies have been proposed to deal with authorized access when conducting sensitive transactions on mobile devices. Such is the two-factor authentication which require at least two different "factors" before being granted access. The study indicated that mobile banking customers normally used one-time passwords when accessing their mobile banking application/service. Similar results were noted by Musaev and Yousoof (2015) who state that, other security methods include one-time passwords used by customers, use of phone or SMS authentication codes or automatic lockouts after sets of unsuccessful attempts.

The study showed that mobile banking customers believed that mobile banking had a lot of security and privacy issues. The results of this study correspond with Venable Telecommunications (2008) which indicated that, security and privacy issues are the most complicated challenges that need to be addressed jointly by mobile application developers, wireless network service providers and the banks. The study revealed that mobile banking customers believed that the security controls for mobile banking were not mature enough. Pegueros (2012) provides support for this result by indicating that the security controls and tools available have not matured to accommodate the constraints of limited processing power and limited battery life.

5.3.3 Trust and Adoption of Mobile Banking

The study showed that customers used mobile banking because of their ability to be vulnerable to new technology. Lippert and Davis (2012) provide support for this result by indicating that, technology trust relates to an individual’s willingness to be vulnerable to an information technology based on expectations of technology predictability, reliability
and utility. The study revealed that customers used mobile banking because of their repeated interactions with the platform. Remarks made by Gefen et al. (2013) also provide support for this result by indicating that, knowledge-based trust which is also known as experienced trust is about trust building through repeated interactions.

The study indicated that customers built their trust in mobile banking through their first impression of the service. The study results were confirmed by Soderstrom (2013) who notes that, cognitive-based trust which is also termed as initial trust, refers to trust building through first impression rather than repeated interactions. The study exposed that customers used mobile banking because of its usefulness in their day-to-day service. Yan (2014) provides support for the study findings by stating that, customers form the cognition of electronic media according to similar practices such as the use of online banking and telephone banking for payment.

The study showed that customers used mobile banking because of mobile value-added services it provides. Yan (2014) provides support for the study findings by stating that, usefulness and entertainment of the mobile phone business through the experience of mobile value-added services, and thus realize the formation of trust on the mobile banking system. The study specified that customers used mobile banking because of their self-efficacy (ability to use mobile banking applications). This study result is reinforced by Tao (2012) who state that, self-efficacy is a subjective judgment or conviction of individuals for their own whether they can take advantage of existing skills to complete a particular activity successfully, which represents the individual’s self-confidence and competence of an activity.

The study exhibited that customers’ self-efficacy had increased their confidence in mobile banking usage. This result of the study is reinforced by Mcknight and Choudhury (2012) who state that, self-efficacy will increase their confidence in using mobile banking, and in turn strengthen the goodwill of mobile banking through confident psychological and form emotional trust. The study indicated that customers used mobile banking because of the real-time information of services. Cheolho (2009) reinforces the study finding by stating that, mobile banking is built on the basis of wireless network technology and its biggest advantage is to provide users with real-time information and ubiquitous services.
The study revealed that customers used mobile banking because of the mobility of banking it had provided. Observations made by Jia et al. (2012) support the study findings by stating that, through mobile banking, users can carry mobile devices such as mobile phones and PDAs to access to the network and banking system, thereby accept the service at any time in anywhere. The study specified that customers used mobile banking because of the personalized information or services it provided. Wang (2014) provides support for the study findings by stating that, through mobile banking, banks can provide personalized information or services according to the needs of users, such as mobile location-based services, which is according to the user’s geographical location and display nearby ATM network location information on the interface.

5.4 Conclusions
5.4.1 Perceived Usefulness and Adoption of Mobile Banking
This study was driven to examine the effect of perceived usefulness on the adoption of mobile banking, and from the study results and findings, it can be concluded that, perceived usefulness is a significant factor to the adoption of mobile banking. The study showed that there was a significant relationship between perceived usefulness and mobile banking adoption, since the customers’ increase of their perception of mobile banking in terms of perceived usefulness, increased their adoption of mobile banking significantly. This conclusively showed that perceived usefulness was and is a very significant factor to the adoption of mobile banking in Kenya.

5.4.2 Perceived Risk and Adoption of Mobile Banking
The study pursued the examination of the effect of perceived risk on the adoption of mobile banking, and the results showed that perceived risk was a significant factor to the adoption of mobile banking in Kenya, and thus the conclusion that perceived risk is significant to the adoption of mobile banking in Kenya. The results of the study indicated that when customers increase their perception of perceived risk in mobile banking, their level of adoption was significantly influenced. This conclusively showed that perceived risk was and is a very significant factor to the adoption of mobile banking in Kenya.
5.4.3 Trust and Adoption of Mobile Banking
The study sought to determine the effect of trust on the adoption of mobile banking, and the study revealed that trust positively influenced the adoption of mobile banking. Thus, the study concludes that trust is a significant factor to the adoption of mobile banking adoption in Kenya. The results of the study revealed that the adoption of mobile banking by consumers when up when their perception of trust in the mobile banking service increased. This positive correlation provides the study with conclusive evidence that trust was and is a significant factor to the adoption of mobile banking in Kenya.

5.5 Recommendations
5.5.1 Recommendations for Improvement
5.5.1.1 Perceived Usefulness and Adoption of Mobile Banking
The study showed that some customers did not have complete information about mobile banking services, and as a result, it recommends commercial banks to provide customers with vital and complete information about the various mobile banking platforms that exist. In doing so, the banks will be providing users with key awareness information and they can use their employees to advice and show customers how to effectively and efficiently use these applications. This may increase the adoption of these services.

5.5.1.2 Perceived Risk and Adoption of Mobile Banking
The study showed that most if not all mobile banking services lacked a two-factor authentication process, and therefore, it recommends commercial banks to ensure that their various platforms have two-factor authentication process. This may provide full-proof safety for users, and availability of this feature may increase the adoption ratio of mobile banking.

5.5.1.3 Trust and Adoption of Mobile Banking
The study showed that some mobile banking platforms are not customer friendly, and therefore, recommends commercial banks to ensure that their mobile banking platforms ae easy to understand and use. This will encourage the platform uptake by semi-illiterate customers. Their ability to understand the most functions of these platforms, may increase customers’ trust and thus increase adoption.
5.5.2 Recommendations for Further Studies

The focus of the study was on the effect of customer perception on the adoption of mobile banking in Kenya. The study was carried out on three banks – KCB, SBM and Sidian – only, therefore, similar studies need to be conducted on other financial intuitions in Nairobi and countrywide for a better understanding of how consumer perception influences mobile banking adoption.
REFERENCES


APPENDICES

APPENDIX I: NACOSTI RESEARCH PERMIT

This is to certify that Ms. Lucy Mugwika of United States International University Africa, has been licensed to conduct research in Nairobi on the topic: Effect of customer perception on the adoption of mobile banking in Kenya for the period ending 14/August/2020.

License No: NACOSTI/P/19/402

Applicant Identification Number: 497723

Ref No: 497723

Director General

NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION

NOTE: This is a computer generated license. To verify the authenticity of this document, scan the QR Code using QR scanner application.
APPENDIX II: RESEARCH AUTHORIZATION LETTER

TO WHOM IT MAY CONCERN

10th JULY 2019

Dear Sir/Madam,

REF: PERMISSION TO CONDUCT RESEARCH- LUCY KARIMI MAORE
STUDENT ID NO. 627911

The bearer of this letter is a student of United States International University (USIU)-Africa pursuing a master’s Degree in Business Administration.

As part of the program, the student is required to undertake a dissertation on the “Effect of customer perception on the adoption of mobile banking in Kenya,” requires her to collect data.

Please note that information provided will be treated with utmost confidentiality and will only be used for academic purposes.

Kindly assist the student get the appropriate data and should you have any queries contact the undersigned

Yours Sincerely

[Signature]

Prof. Amos Njuguna
Dean School of Graduate Studies, Research and Extension
Tel: 0730 116 442
Email: amnjuguna@usiu.ac.ke
APPENDIX III: INTRODUCTION LETTER

United States International University – Africa,
P.O. Box 14634 – 00800,
Nairobi – Kenya.

Dear Respondent,

RE: REQUEST TO PARTICIPATE IN THIS RESEARCH.
I am a student at the above-mentioned university pursuing my Master’s Degree. As part of my degree requirement, I am obligated to carry out a study research on the effect of customer perception on the adoption of mobile banking in Kenya. My focus is on three commercial banks, namely: Kenya Commercial Bank, SBM Bank and Sidian Bank.

Kindly understand that the gathered data and information is for academic purposes and will not be used for any other purpose. Your contribution is significant to this study and thus, your support will be cherished. Confidentiality of your information is also assured. If you may have any questions, concerns or comments about this study, kindly contact me.

Thank you for your time.

Sincerely,

Maore Karimi Lucy.
APPENDIX IV: QUESTIONNAIRE

This questionnaire has been formulated for academic purposes and you are therefore requested to provide your honest opinion. Please fill the following questionnaire appropriately.

Part A: Demographics

1. What is your gender?
   - Male [ ]
   - Female [ ]

2. What is your level of education?
   - Diploma [ ]
   - Degree [ ]
   - Master’s Degree [ ]
   - Doctorate [ ]
   - PhD [ ]

3. Which financial institution do you bank with?
   - Kenya Commercial Bank [ ]
   - SBM Bank [ ]
   - Sidian Bank [ ]

4. How often do you make use of the mobile banking services provided by your bank?
   - Very Rarely [ ]
   - Rarely [ ]
   - Neutral [ ]
   - Often [ ]
   - Very Often [ ]

5. What is your most preferred access to your banking needs?
   - Mobile Bank Applications [ ]
   - Online Bank Applications [ ]
   - Other [ ] Specify __________________________________________

6. How long have you used mobile banking?
   - 1-5 Years [ ]
   - 6-10 Years [ ]
   - 11-15 Years [ ]
   - 16-20 Years [ ]
   - 21 Years and Over [ ]
### Part B: Perceived Usefulness and Adoption of Mobile Banking

7. Using the scale 1 - strongly disagree, 2 – disagree, 3 – neutral, 4 – agree, 5 – strongly agree, please rate the following statements about mobile banking adoption.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
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</thead>
<tbody>
<tr>
<td>I like to accessing bank services via my mobile device</td>
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<tr>
<td>I do not have difficulties in banking thanks to mobile banking</td>
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<tr>
<td>My use of mobile banking has increased my efficiency in bank transactions</td>
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<tr>
<td>I use mobile banking to access my unbanked relatives</td>
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<tr>
<td>My access to bank services has been improved by mobile banking</td>
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<tr>
<td>The mobile banking services I use are new in terms of technology</td>
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<td>My usage of mobile banking is driven by the service convenience</td>
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<td>My usage of mobile banking driven by the service accessibility</td>
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<tr>
<td>My usage of mobile banking is driven by the service affordability</td>
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</table>

8. Using the scale 1 - strongly disagree, 2 – disagree, 3 – neutral, 4 – agree, 5 – strongly agree, please rate the following statements about perceived usefulness and mobile banking adoption.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>I use mobile banking application because it helps me bank better</td>
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<tr>
<td>I use mobile banking because it is beneficial to my personal well-being</td>
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<tr>
<td>Mobile banking has improved my banking accuracy</td>
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<tr>
<td>I find mobile banking services easy to use</td>
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<td>I use mobile banking because I can access it easily</td>
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<tr>
<td>I use mobile banking for purchasing items</td>
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<tr>
<td>I use mobile banking because I was told how it works (delivers)</td>
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<tr>
<td>I use mobile banking because it does not disrupt my work</td>
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<tr>
<td>I use mobile banking because am willing to adapt new technology</td>
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<tr>
<td>I use mobile banking because the bank has investment in mobile banking technology</td>
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</table>
### Part C: Perceived Risk and Adoption of Mobile Banking

9. Using the scale 1 - strongly disagree, 2 – disagree, 3 – neutral, 4 – agree, 5 – strongly agree, please rate the following statements about perceived risk and mobile banking adoption.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
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<tbody>
<tr>
<td>My major concern in mobile banking is losing money through transactions</td>
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<td>My insecurity has deterred my adoption of mobile banking</td>
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<tr>
<td>My major concern in mobile banking is being hacked</td>
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<tr>
<td>I believe mobile hacking has increased because of mobile banking</td>
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<tr>
<td>Am fearful of someone gaining access to my mobile banking code (PIN)</td>
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<tr>
<td>Am fearful of someone stealing my identity to gain access to my bank account</td>
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<tr>
<td>I normally use a two-factor authentication process when accessing my mobile banking application/ service</td>
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<tr>
<td>I normally use one-time passwords when accessing my mobile banking application/ service</td>
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<tr>
<td>I believe that mobile banking has a lot of security and privacy issues</td>
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<tr>
<td>I believe that the security controls for mobile banking are not mature enough</td>
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</table>
**Part D: Trust and Adoption of Mobile Banking**

10. Using the scale 1 - strongly disagree, 2 – disagree, 3 – neutral, 4 – agree, 5 – strongly agree, please rate the following statements about trust and mobile banking adoption.

<table>
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<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
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<tbody>
<tr>
<td>I use mobile banking because of my ability to be vulnerable to new technology</td>
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<tr>
<td>I use mobile banking because of my repeated interactions with the platform</td>
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<tr>
<td>I built my trust in mobile banking through my first impression of the service</td>
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<tr>
<td>I use mobile banking because of its usefulness in my day-to-day service</td>
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<tr>
<td>I use mobile banking because of mobile value-added services it provides</td>
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<tr>
<td>I use mobile banking because of my self-efficacy (ability to use mobile banking applications)</td>
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<tr>
<td>My self-efficacy has increased my confidence in mobile banking usage</td>
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<td>I use mobile banking because of the real-time information of services</td>
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<td>I use mobile banking because of the mobility of banking it has provided</td>
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<tr>
<td>I use mobile banking because of the personalized information or services it provides</td>
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