# FACTORS INFLUENCING ADOPTION OF DIGITAL BANKING SERVICES BY CUSTOMERS IN KENYA: A CASE OF COMMERCIAL BANKS IN THIKA SUB COUNTY- KENYA

**BY**

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## DECLARATION

This research project report is my original work and has not been presented for any examination in any other institution

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## DEDICATION

To my Parents Evans and Jane Juma, whose sacrifice that I had a good education ensured that I am able to write this today, also to my brothers and sister, for their support during the many long nights.

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## ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| ATM | Automated Teller Machine |
| CBK | Central Bank of Kenya |
| Co-op | Cooperative Bank |
| DTPB | Decomposed Theory of Planned Behavior |
| GPS | Geographical Positioning System |
| IMT | International Money Transfer |
| IS/IT | Information System/Information Technology |
| KCB | Kenya Commercial Bank |
| KYC | Know Your Customer |
| PCB | Perceived Behavioral Control |
| PEOU | Perceived ease of use |
| POS | Point of Sale |
| PU | Perceived usefulness |
| PWC | Price Waterhouse Coopers |
| SN | Subjective Norm |
| TAM | Technology Acceptance Model |
| TPB | Theory of Planned Behavior |
| TRA | Theory of Reasoned Action |

## ABSTRACT

In the wake of the 21st century, banks have rapidly embraced the use of modern technology in the provision of services to their growing clientele. This is in line with remaining relevant to the dynamics of the economic environment coupled with competition from other institutions. This notwithstanding, the uptake of these services has not been to the desired levels as evidenced by the long queues in banking halls and a rising number of branch networks in the country and beyond. The purpose of this study was to investigate the factors that influence the adoption of digital banking services in Kenya. The study was guided by 4 objectives namely: To establish the influence of awareness, customer trust, perceived usefulness and the perceived ease of use of technology on adoption of digital banking services. The study targeted 282,877customers of Thika Branches of four Commercial Banks namely Co-operative, Equity, Family and KCB. The four banks were chosen because they that have the highest number of client base and market presence in the town. Stratified random sampling technique was used to select a sample size of 384 customers. Information was collected using a Bank Customers Questionnaire. Data was analysed using SPSS program version 21. Data was presented using frequency tables. Student's t-test was used to establish if there are any significant differences between genders. ANOVA was used to establish if there are any significant difference in the customers' responses toward digital banking services and age, status of employment, banks and highest level of education. Pearson product correlation coefficient was used to establish the relationship between perceived awareness, trust, usefulness and ease of use on adoption of DBS. A model for the prediction of adoption of DBS using the four variables was developed using a regression analysis. The study found out that majority of the customers were male. It also established that majority of the customers 205 (60.5%) preferred mobile banking, followed by agency banking 99 (29.2%) and those who preferred internet banking were 36 (10.6%). The study established that there was a significant difference in the perceived awareness of digital banking services by age ($F = 5$, 9.934 at $\propto = .001$).The respondents aged 28-37 years were more aware about digital banking services than the rest. The study found out that awareness, perceived usefulness and perceived ease of use positively influenced adoption of DBS while lack of trust negatively influenced the adoption of DBS. Overall score ($\bar{x} = 4.78$) showed that the respondents agreed that the digital banking services were perceived as useful. The respondents agreed they used the Digital Banking Services due to its perceived ease of use ($\bar{x} = 4.78$). The value of $R^2$=0.23 obtained showed that awareness($x_1$), trust($x_2$) perceived usefulness($x_3$) and ease of use ($x_4$) accounted for 23% of the total variation of adoption of digital services(y). The regression equation obtained was $y = 9.179 + -.183x_1 + 0.028x_2 + 0.014x_3 + .0215x_4$. The study recommends aggressive advertisement to increase awareness of digital banking services as it had the largest contribution among the four factors. The study recommends a further study to find out the influence of culture and personal traits on adoption of digital banking services.

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background of the Study

With new technologies driving service convergence amongst industries, the internet, mobile and point of sales technologies are enabling the coupling of digital networks together with that of financial services (Ha,K.H, Canedoli, A., Baur, A.W& Bick,M, 2012). The world in the 21st Century is becoming more digitized. Lives, especially those of persons in the age group commonly referred to as Generation-Y (born in the 1980s and 1990s) who are at the verge of deciding their initial banking relationships, is dominated by mobile phones and the internet (Price Waterhouse Coopers 2011). With increasingly more people owning computers, laptops and mobile phones with internet connection, many in one way or another participate in this digital reality benefiting from many of the opportunities it offers (PwC 2011).

Banks intensively utilize information for their business and have been known to be early adopters of information technology (Bons, R.W.H, Alt, R., Lee, H. G and Webber, B.. 2012). In the last 15 years, banking operations have been digitized on a grand scale (PwC, 2011). The potential of digitized service applications are prompting many banks to spend huge amounts of resources on these technologies (PwC, 2011). Digital banking services provide values that are not available through traditional banking services including cost savings, ubiquity, flexibility and convenience (Wang, Y., Lin, H. and Luarn, P. 2006). Ha, et al. (2012) note that digital banking has changed the way customers interact with their banks leading to new selling and buying behaviors.

It is increasingly becoming important to offer value added interactive location based services to customers in order to maintain a competitive edge especially in the retail segment of the market (Wang, et al. 2006). Internet, mobile and agency banking are key drivers of this transformation, not only having significant consequences to the internal functions of banks but also the banks' interactions with their customers (Yang, 2009). Financial transactions are changing in step with new technologies as it is predicted that more people will seek convenience and avoid the traditional banking forms like visiting branches (PwC, 2011). Technology and customer behavior will definitely define the future of banking services.

A recent research by PricewaterhouseCoopers (PwC, 2011) suggests that digital banking will become the standard by 2015 especially in developed countries. It suggests that 'traditional banking is facing its steepest challenge in over a generation. We believe that a new tipping point has been reached with digital at its fulcrum (PwC, 2011 p.2). The study showed that close to 69% of bank customers already use online services to purchase financial products thus indicating a continuous growing trend of which banks must keep pace. The study based on more than 3000 banking clients from all over the world revealed that most customers were willing to pay a little bit more for digital services that offered them convenience and added value. With the advent of multiple players offering financial services, banks are finding it more difficult to stay competitive and relevant. Even amongst themselves, banks are continuously in cut throat competition against each other. Most banks view digital banking as the key to retaining and attracting new customers and maintaining profitability (PwC, 2011).

By large, brick and mortar branches are still at the core of most retail banking especially in developing countries (Ha, et al. 2012). However, this is being challenged by the emergence of new age digital banking services where customers wish to avoid the inconveniences of standing in long queues for basic bank transactions (PwC 2011, Ha, et al. 2012). In offering banking services, an effective model would be one that offers most convenience, at the shortest time and lowest costs to customers while still maintaining the same level of fidelity and security expected of banks. Digital banking seems to fit this model perfectly (PwC, 2011).

The past two decades have seen advances in telecommunications and computing spearheading global changes in banking services. Internet banking was first introduced in the USA around 1995, since then Europe has been leading in internet banking usage (Schneider, 2001). Internet banking refers to the performance of transactions and execution of payments through an internet medium on the website of an organization offering banking services, normally a bank. It allows for access of services round the clock from any location that has internet available. Banking services that can be conducted through the internet include payment of bills, electronic transfer of funds, ordering cheques and viewing balances in accounts (Chou & Chou, 2000).

Primarily, banks benefit from internet banking in terms of savings in costs as the delivery channel of services is cheaper mainly through reduced number of staff. According to Tuchila (2000), there are several other advantages that would accrue to banks in developing internet banking services. These include; reduced transaction costs, increased market penetration, improved image and advertising advantages and rapid response to market changes. For

customers, convenience may be the biggest draw to internet banking. However other advantages may include time savings, faster transaction speeds, and better management of funds.

In both developed and developing countries, mobile phone technologies and services are delivering increased values to customers that were absent before (Ha, et al. 2012). There has been a rapid development of mobile gadgets and coupled with faster internet protocols have led to increasing number of internet users thus making it possible to offer services to customers through mobile phones (Varshney, 2004). With evidence of changing customer behavior and predictions that the number of people accessing the internet will increase exponentially by 2015, banks and other financial services providers regard this as a future growth opportunity (Ha, et al. 2012).

For providers of banking services, mobile technologies offer expansion in the range of services offered to customers by creating new avenues of usage and increased contact with these institutions (Ha, et al. 2012). In developing countries, mobile technologies are bridging the digital gap hence opening up new markets to banking services providers.

Mobile banking has assisted providers of banking services in accessing larger markets of previously unbanked populations especially in developing countries without setting up the traditional network of branches (Ha, et al. 2012). According to a study by DFID (2010), 1.7 of 2.7 billion people without access to financial services have mobile phones thus providing banking services providers with an opportunity to reach these people through already established channels. Ha, et al. (2012) argues that mobile banking has the potential on conveying new under supplied markets to banks. According to studies in the literature,

mobile banking has many advantages as compared to other conventional channels of banking. These include; ubiquity where customers can access services wherever they are, immediacy, and instant connectivity (Luarn & Lin, 2005). Through mobile banking, services are accessible round the clock, and information can also be pushed to customers without them needing to search for it. Furthermore, through use of Geographical Positioning System (GPS), banking services providers are able to know the locations of their customers thus able to adapt communication to specific needs. Mobile banking has also advantages as it can be used in place of more expensive avenues of banking such at ATM's and staff at branches thus reducing costs and increasing revenues to service providers (Ha, et al. 2012).

Through agency banking, banks provide banking services through nonbank agents such as retail outlets, gas stations and pharmacies (Kumar et al. 2006, Siedek 2008). These local establishments usually double up as branches of banks and other banks offering services such as payments of bills and pensions, money withdrawals, deposits and transfers (Siedek 2008). This model allows banks to reach customers in areas where they have no branches especially in rural and remote areas where the majority of the unbanked populations live (Kumar et al. 2006). According to Siedek (2008), a bank can operate through 40 agents at the price of opening a single branch.

Agency model of banking was developed in Latin America with Brazil considered to be the global pioneer who has now developed a country network of agent banks (Ignacio & Siedek, 2008). Other countries such as India, Pakistan, Philippines, Peru, Mexico, Colombia and Venezuela also have strong networks of agent banks (Siedek 2008). In Africa, Kenya, Uganda and South Africa have also utilized this banking model in order to expand banking

services. Kenya first implemented agent banking in 2010 and already has over 20,000 agent banks.

Although the goals of agency banking are relatively the same in all countries – bridging the financial inclusion gap, their design implementation and the regulations governing them differ from country to country (Kumar, et al. 2006). Differences may occur in terms of services offered, the banks offering services through agents and the agents themselves. Financial inclusion refers to the provision of access to financing and credit including payment services. It includes both service provision as well as utilization of these services by customers (Siedek 2008).

The agents process financial transactions through point of sale (POS) devices which through secure phone line or other network is connected to servers of the banks (Siedek 2008). The agents receive a part of the transaction charges. Apart from the lower set-up and operating costs, the agents also offer other advantages including decongesting branches, expanding geographical coverage and attracting new customers who would otherwise shy away from using formal bank branches as they feel comfortable transacting with local vendors (Ignacio and Siedek 2008).

However, there are also some challenges facing agency banking. Siedek (2008) notes that one significant challenge for banks, is to fit the agents within their branding objectives. Another challenge is that the targeted population has not fully embraced all the choices of services offered through bank agents. For example in Brazil, most agency banking users only use it to access their welfare cheques or receive their wages. There seems to be a lack of trust of agents with only 6 percent saving through agents (Siedek 2008). Another challenge is the

difficulty in managing cash liquidity caused by the fact that most agents have more inflows from payment of bills than outflows leaving them with hoards of cash in small retail stores thus also creating security issues.

About 2.7 billion are unbanked thus remain without access to formal financial services. Worldwide, about 75% of adults without bank accounts cite lack of adequate finances as a reason not to have an account while the rest largely cite account opening costs and distance to banks as the reasons (Mroueh, 2013). Digital banking services are progressively becoming important to customers worldwide.

South Asia is one of the fastest growing regions in terms of digital banking (Alexander, 2009). Mobile phones play a prominent role in the provision of this service. Remittances have become indicative of the potential of digital banking greatly contributing to the growth of the economies of many countries in South Asia. Issues of security, the amount of money sent (usually small amounts) and the cost of remitting finances abroad has led to the tremendous growth of digital banking services especially in Pakistan, India, Bangladesh, Philippines amongst others. In the gulf, digital banking services have been rolled out in the United Arabs Emirates (UAE) targeting mostly migrant workers under a programme known as Wage Protection Systems (WPS). WPS is government regulated to ensure timely payment of wages and salaries with payments completed within formal banking systems through ATM withdrawals (Mroueh, 2013).

According to the Central bank of Kenya (CBK), only 23% of adults could access formal financial services in 2009, 32% of Kenya's bankable population remain unbanked and with even more only served by informal financial systems (FSD, 2009). However, access to

financial services is gradually increasing due to advances in technology and other innovative banking models including internet, mobile, and agency (CBK, 2009).

The rapid growth of mobile money services especially through Safaricom's M-PESA has allowed clients with small financial transactions to be served and which has led to both competition and collaboration with banks. M-PESA currently only provides money transfer services, but this is not guaranteed to remain so (Mas, et al. 2010). Already there are collaborations with Commercial Bank of Africaon Mshwari and Western Union that allows M-PESA account holders to receive remittances into the mobile accounts. This is clearly putting pressure on banks to join this digital bandwagon.

In Kenya, about 4.5 million adults possess formal bank accounts (Mas, et al. 2010) with most banking services restricted within urban centers. However, other non-bank players including mobile phone operators also provide banking services largely driven by Safaricom through M-PESA and M-Shwari and ZAP, a service offered by Airtel. Safaricom launched M-PESA in 2007 (Hughes and Lonie, 2007) which has grown to over 11.8 million clients in 2010 served through 19,500 agents. MPESA has developed through the years with additional services including salary payments, money transfers and payment of bills introduced. Airtel launched its ZAP M-banking services in 2009 with clients able to send or receive money into their mobile phones from all parts of the world. These services are highly popular for their low value (minimum cost KES35/transaction) thus generating high volumes.

Mainstream banks have joined into this mobile banking bandwagon. By end of 2010, eight banks had partnered with MPESA as agents or super agents with ZAP partnering with Standard Chartered Bank and Citi Bank enabling customers to withdraw cash, pay bills and

transfer money indicating the increasingly importance of mobile banking services (Mas, et al. 2010). Through the International Money Transfer (IMT), MPESA partners with various agents such at Western Union to offer financial services between Kenya and the United Kingdom and with Commercial Bank of Africa to offer the M-Shwari account that is helping bring the unbanked population into the formal banking system after a change of regulations by the Central bank of Kenya (CBK) in 2010. These regulations allowed banks, through agents to offer banking services.

## 1.2 Statement of the Problem

In order to reduce poverty in Kenya, financial inclusion of the unbanked is paramount. While financial and other institutions are involved in efforts to increase financial services, many Kenyans still live below the poverty line and can ill afford these services. This unbanked populace livelihoods' would be greatly improved if they can get access to basic financial services. According to Financial Access (2010), including the masses within the formal financial economy has many advantages for countries especially in the developing world as it builds financial security, better infrastructure and reduces corruption.

Banks are experiencing increased cost pressures and market uncertainties from other institutions offering financial services (Njuguna et al, 2012). The development of new technologies such as M-PESA is heavily impacting on traditional banking revenue pools especially in sectors such as payments and money transfer. Banks have to build their potentials in this era of internet and mobiles from their long experience of applying Information Technology within the industry (CBK, 2010). Many banks already have internet and mobile banking applications. Some banks have also rolled out agency banking services,

expanding access to formal services closer to where majority of clients reside and work. However, while entertainment applications and social media are greatly popular within Generation Y, digital banking has been adopted by only a minority of users (Kwiatkowski, 2010 ; Zhou, 2010 and Ha, et al, 2012). This signals the potential that digital banking has as an emerging service (Wang, et al. 2006). Despite investments made by banks in offering digital banking services, these are either being underused of have been ignored by customers regardless of their availability (PwC, 2011). This roll out has not kept up with expectations even though future outlooks are still optimistic (Ha, et al. 2012). For long-term success of digital banking it is important to attract new customers and retain existing ones (Wang, et al. 2006). For this new model of digital banking, banks suffer the risks of not attaining critical mass of acceptance to attain profits and the possible danger of late entrants of competitors stealing market share (Littler and Melanthiou , 2006). Despite the many advantages provided by digital banking (PwC 2011), many customers are yet to adopt these services (Littler and Melanthiou, 2006). Understanding reasons for this slow adoption would be useful for banks in formulating strategies aimed at increasing the use of digital banking services.

### 1.3 Purpose of the Study

The purpose of this study was to investigate the factors that influence the adoption of digital banking services in Kenya.

### 1.4 Objectives of the Study

The study was guided by the following four objectives:

i. To establish the extent to which Customer awareness influence adoption of digital banking in commercial banks of Thika Sub-County.

ii. To examine how customer trust influence adoption of digital banking in commercial banks of Thika Sub-County.

iii. To determine the extent to which perceived usefulness influences digital banking adoption in in commercial banks of Thika Sub-County.

iv. To find out whether perceived ease of use of technology influences adoption of digital banking in commercial banks of Thika Sub-County.

### 1.5 Research Questions

The study sought to answer the following questions:

i. To what extent does awareness influence the adoption of digital banking in Thika Sub-County?

ii. How does customer trust influence adoption of digital banking in Thika Sub-County?

iii. To what extent does customer perceived usefulness influence adoption of digital banking in Thika Sub-County?

iv. Does perceived ease of use influence the adoption of digital banking services by customers in Kenya?

## 1.6 Significance of the Study

There are many studies that have investigated the factors influencing the adoption of either online or mobile banking services and very few at agency banking, but none has looked at these three services combining them into digital banking. Additionally, most of these studies have been conducted in developed countries with very few studies related to Information Systems/Information Technology adoption or acceptance done in developing countries. It is argued that robustness of theories and models may vary across cultures and therefore there is need for studies of Information Systems/Information Technology adoption in developing countries such as Kenya. The study hopes to be of great importance to the various groups of persons/organizations. The findings from this study will hopefully assist Commercial Banks in Thika improve their digital banking services in ways that customers want to use them including the targeting and marketing of these services through discovering why potential users do not use the available system in an effort to build a larger and satisfied customer base. The study will be shared with other Co-operative Bank branches and possibly other banks in the country as it seeks to increase to the body of knowledge concerning adoption of digital banking by customers in the country.

## 1.7 Assumptions of the Study

The main assumption of this study was that digital banking will become an important model of offering banking services. It is also assumed that the customers who filled the questionnaires use digital banking services, have varied employment status, are of different gender and levels of education.

## 1.8 Limitations of the Study

The study is based on a population from single branches of four banks in Thika Town. There are more banks in the town and many more branches of the four banks in the country. The study findings may not be generalized for the banking sector in Kenya. The study only investigated four constructs of the digital banking services: Awareness, trust, perceived usefulness and perceived ease of use. It did not investigate culture and personality traits.

## 1.9 Delimitation of the Study

The study was carried out in single branches of Co-operative, Equity, Kenya Commercial and Family banks located in Thika Town, Kiambu County. The population comprised of the bank's customers. Sampling was amongst those waiting in queue to be served, both male and female. Thika, being an economic hub has a large number of banked populations which provides a good catchment for the respondents though there are other Commercial bank branches in Kiambu County.

Thika Sub county was selected because it represents a diversity of social and economic backgrounds with small and medium sized enterprises, small holders commercialized agriculture and wage works from elsewhere who would find use of digital banking services very useful.

## 1.10 Definitions of Significant Terms

In this study, the following words were used for the purpose and with the intention as explained below:

Digital Banking: This refers to the use of Information System/Information Technology though restricted to internet, mobile and agents, in offering banking services to customers.

Internet Banking: Often used interchangeably with online banking, this refers to the performance of banking transactions such as the viewing of one's account balance, paying bills, ordering cheques, transferring funds between accounts etc over the internet through a customer's financial services provider's website.

Mobile Banking: The use of mobile terminals such as cell phones to access banking services including account inquiry, money transfers and payment of bills.

Agency Banking: Refers to a banking model, where banks provide banking and other financial services through agents, such as retail stores, gas stations, groceries, pharmacies and post offices.

Adoption of Digital Banking Services: This refers to acceptance by customers receiving and using banking services including internet, mobile and agency banking willingly as indicated by the level of trust, awareness, perceived use and perceived ease of use.

Perceived usefulness: Degree to which digital banking service users believe that using the systems will increase their productivity

Perceived ease of use: Refers to the level by which users believe that the system use will be without much effort.

## 1.11 Organization of the study

This chapter has presented an introduction of digital banking, giving a background of the problem, statement of the problem, the purpose of the study, research questions, and justification of the study and scope of the study. Chapter two shall present a review of the literature related to the problem including the conceptual model and hypotheses of the study. In chapter three, the research methodology shall be looked into giving the research design, population, sampling techniques and the research instruments. Methods of data collection analysis shall be discussed and lastly on the ethical consideration and operational definition of variables. Chapter four shall present data analysis, presentation and interpretation and the discussions on the same. At the end of the study, chapter five will look at the summary of findings, conclusions and recommendations made based on the findings of the study.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

This chapter provides a wider understanding of the concepts and variables of this study from previous research. The content of this chapter focuses on literature review on relevance of digital banking services, theories in adoption of information technology, and the theoretical framework guiding this study. This provides a backdrop for understanding current knowledge on the topic and shows how significant the study is through identification of the gaps of knowledge that emanate from past literature.

## 2.2 Influence of Awareness on adoption Digital Banking Services

In a study by Pikkarainen, et al (2004), awareness of online banking was found to be important in determining users' acceptance of online banking. Similarly, Sathye (1999) concluded that customers considered how much information they had about internet banking before adopting it and argued that the lack of awareness of internet banking and its benefits was the major obstacle to customers adopting internet banking in Australia. He identified information about the product benefits as essential in promoting the product and thus for services such as digital banking, it is essential for banks to ensure that consumers are aware of their availability and value addition. Siedek (2008) concurs with this argument, noting that similarly for agency banking, banks have to invest heavily in marketing and advertising to ensure that potential customers are aware of the services offered in order to build up mass adoption.

According to Rogers and Shoemaker (1971), users experience a process that include awareness, assurance, choice and affirmation before becoming willing to adopt to new technology. This adoption or rejection of new technical products or services begins when the potential user becomes aware of the technology (Rogers and Shoemaker, 1971). Lack of awareness is the key factor that negatively affects Internet banking adoption (Sathye, 1999). The implications of the above findings are that banks have to communicate to their prospective customers the concrete benefits of digital banking (including ubiquity, localization and immediacy) through targeted marketing operations. This could be achieved through focusing on the digital value settings, essential needs and arrangements, spontaneous needs and decisions and mobility related needs (Sathye, 1999).

The benefits of branchless banking are perhaps best illustrated by direct digital banking, which has evolved from an online payments model into a complete suite of banking services, whereby customers can upload their account opening forms and subsequently be Know your Customer (KYC) verified and on-boarded, without the intervention of bank staff. They can go on to acquire a full range of products online, from simple deposits and mortgages to bundled insurance and complex structured products (Trends, 2009). For instance, a leading bank offers multiple product originations such as bundled home loans and insurance. Another leading bank has everything from credit cards to travel services in its suite. From the customers' point of view, the experience and convenience of direct banking is hard to match elsewhere. Banking institutions too have reaped the benefits of branchless banking in several ways. Direct digital banking has emerged as a viable market entry strategy, enabling banks to test the waters in new geographies before going the distance with a full-blown brick and mortar infrastructure (Trends, 2009).

According to the CGAP report on branchless banking, channels of branchless banking, including the Internet, mobile and agency have improved reach at much lower cost. Employing an aggressive customer acquisition strategy, banks have tried to attract customers by passing on the advantage of low channel costs as higher interest on deposits originated online. The increase in their online customer base has given them an opportunity to cross-sell other products. Perhaps the greatest advantage of digital banking is its capability to serve the un-banked and those in far-flung locations. Traditionally, financing institutions have depended upon a network of field agents to deliver banking services to remote areas and help their un-banked populations open accounts online (Trends, 2009). But the emergence of mobile banking has enabled even these users to perform simple banking transactions independently, using simple icon-based menus. Besides fulfilling their financial inclusion agenda, state agencies are also helping banks in cutting operational costs by making salary payments through non branch channels.

"The financial services that may be delivered through the mobile channel are, in essence, no different to those delivered through conventional banking channels and agent channels emerging in a number of developing markets." This quote, from the report "Regulatory Issues around Mobile Banking," authored by Paul Makin refers to the rapid rise of mobile phones in emerging markets, including Africa, the Middle East and Pakistan. As mobile adoption continues, it presents a huge opportunity to improve access to financial services and products by building upon its widespread presence, low cost of deployment and easy-to-use technology. However, reaching new customer segments in these underserved markets requires not just a purely mobile banking (m-banking) solution, as is prevalent in the

developed world, but rather a broader “digital banking” solution that can encompass the needs of the mass unbanked.

Digital banking has two key benefits: It provides convenience to those who are fully banked by offering greater access to account information and bank services. At the same time, it allows for greater inclusion of more consumer segments by leveraging technology that brings financial services to underserved populations. Traditionally, financial institutions have not actively marketed to this latter group because they were considered lower-margin customers who could overwhelm customer contact points, such as ATMs and branches, at the expense of losing more profitable, affluent clientele. The branchless model, where applied properly, has the potential to close the gap and mitigate those concerns (Forrester, 2008).

With all this being said, proper communication channels still lack, and extensive research needs to be done in order to foster greater awareness creation to the customers. This will be able to address the short comings related to the lack of information on current digital banking options that are available for use.

### 2.3 Trust and Adoption of Digital Banking Services

The issue of trust is widely represented in literature, but there lacks a succinct definition of the term as its meaning differs across a variety of disciplines. Customer trust is acknowledged as an important factor for the success of digital banking services (Paylou & Gefen 2004). According to Kim et al. (2009), trust is a psychological belief that an opposite party will behave honestly. One party is often willing to be vulnerable to the actions of another with an implied risk and dependency on each other. Trust is an important issue in all relationships and there have been several studies in the realm of IS/IT that have dealt with it (Gefen et al. 2003,

Paylou & Gefen 2004). Financial transactions especially those that are done digitally (or using non-traditions models such as agents) entail a greater risk for customers making it an important consideration for the success of digital banking (Cheng et al. 2006). There are several levels at which trust can be examined because different types of actors are involved in trust relations. Some scholars pay attention to the trust relations that emerge between individuals, which is known as interpersonal trust. This type of trust is established between two or more interacting individuals who through time learn about each other. As they learn, they make judgments regarding each other's disposition, intentions, and motives.

Several authors have also pointed to something called extended trust to explain trust relations that extend beyond those that we know personally. They argue that this type of trust is essential for an efficient market economy because it fosters co-operation between individuals who may not have prior information about each other. Several explanations have been given as to why individuals choose to cooperate, even without this information. Some argue that an individual's role in society can form a basis of presumptive trust. It is not the actual person that is trusted but the system of expertise that produces and sustains role-appropriate behavior. For example, Dawes (1994) asserts that "we trust engineers because we trust engineering and believe that engineers are trained to apply valid principles of engineering, moreover, we have evidence every day that these principles are valid when we observe planes flying".

Whilst some pay attention to relations that emerge between individuals, others examine those that exist between individuals and institutions such as corporations or political parties. This is commonly referred to as institutional trust. It is different from interpersonal trust because it is

based on trust in institutional arrangements rather than in people. Institutional trust, however, also includes an element of interpersonal trust. This is because the beliefs held about a particular institution can be contingent upon the personnel which they staff. For example, Zimmer (1972) argued that institutional leaders can greatly affect the way in which the entire institution is perceived. To make this point, he examined the impacts of the Watergate scandal on perceptions of trust by the public on the government. He concluded that the violated trust of Nixon led to a generalized distrust for the American government.

Within the IS/IT sector, trust can be distinguished into two realms; trust in the system of delivering services and trust in service providers (Lee et al. 2007). Bhattacherjee (2002) likewise defined and measured customers' trust for service providers on the basis of ability, integrity and benevolence. Systemic trust is vital in encouraging clients to use the technological system that is associated with digital banking. Here, security of clients' finances and other personal details is of most important. Customers have a fear to providing their financial details through the internet or mobile (Kim et al. 2009). In a study by Cheng et al. (2006), they found out that internet security was a significant consideration for customers in deciding whether to use internet banking. According to PwC (2011), customers may find it difficult to trust digital technology because of system security, distrust of service providers and service reliability. The more customers exhibit confidence in digital technology, they would be more willing to adapt to digital banking services (Kim et al. 2009). For this study, only two aspects of trust that affect customers directly will be focused on. These are; customers' trust of banks and bank agents and trust on the technology used to deliver digital banking services.

Banking transactions contain very sensitive information about customers (Gefen, 2000; Morgan and Hunt, 1994). Individuals fear providing sensitive information such as financial details on the net or over the phone, as a result of security defects and distrust of service providers (Suh and Han 2002). The establishment of Trust and confidence plays a major role when providing financial services (Palmer and Bejou, 1994). Forming Trust (e.g. Cognitive Based Trust and Disposition Based Trust) before experience should have a significant impact on customer intention toward Online Banking acceptance. The question of Trust is more important in the digital banking environment than in the offline-banking environment (Ratnasingham 1998).

Trust as a belief gives credit to others before experience and is very important in the initial stages of a relationship. Reichheld and Schefter (2000) argued that this disposition is very important with inexperienced online customers. In a study examining trust in M-banking transactions in Nairobi by Morawczynski and Miscione (2008), the authors concluded that there was a general lack of interpersonal trust between M-PESA customers and agents delivering the service and also trust with the system where their money was in "mobile phones". In this study, the two perspectives of customers' trust were investigated.

### 2.4 Perceived Usefulness (PU) and Adoption of Digital Banking Services

Perceived usefulness has been found to be one of the most useful drivers influencing the adoption of IS/IT (Lee et al. 2007). Consumers will adopt digital banking services if they believe that they offer added value as compared to the traditional services. Continued usage of these services will also depend on usefulness as confirmed by ongoing usage experiences of the consumers. PU is defined as the degree to which users believe that using a system will

increase their productivity (Davis, 1989). Through several studies (Davis 1989, Davis et al. 1989, Wang et al. 2003), PU has been found to majorly influence the adoption of IS/IT.

Influence of PU on system utilization was first suggested by (Schulz and Slevin 1975) and (Robey 1979). The former conducted a factor analysis of 67 items that found performance to be highly correlated with self-predicted use of decision model. Likewise, Robey (1979) argued that people will not favorably adopt a system that did not help them perform their jobs. DeSanctis (1983) presented and analyzed a different expectancy-theoretic model in which he used a matrix-oriented measurement to analyze use-performance expectancy, results that underscored the significance of measurement in forecasting and explaining use.

Digital banking, which started with the launch of the ATM years ago, has changed immeasurably with the emergence of other technologies. Now, banks can leverage capability to speed up product rollout and make unique and customized offers. Portal servers make it possible to bundle multiple web applications from various providers, and offer them under a single window. Token and biometrics-based technologies improve security through second and third factor authentication (Davis, 1989).

Mobile phones, acting as digital wallets, do away with cash and plastic in most transactions. Unified communications and Web tools help render personalized assistance over self-service channels. Going forward, new technologies will continue to enable the digital banking philosophy, which is the delivery of great customer experience with least human intervention.

According to Davis (1989), user intention to adapt to new technology is influenced by intrinsic and extrinsic motivations. Extrinsic motivation refers to the “performance of an

activity because it is perceived to be instrumental in achieving valued outcomes that are distinct from the activity itself" (1989, p. 1112). On the other hand, intrinsic motivation refers to the "performance of an activity for no apparent reinforcement other than the process of performing the activity per se" (p. 1112). PU is classified as an extrinsic motivation that strongly impacts IS/IT adoption. Davies et al. (1989) further argue that PU is key in the achievement of tasks not characteristic in the use of IT itself mainly dealing with user aspects of new technology. In this context of digital banking services, the study investigated the influence of perceived usefulness on the adoption of digital banking services.

### 2.5 Perceived Ease of Use (PEOU) and Adoption of Digital Banking services

Perceived ease of use (PEOU) is defined as the level by which users believe that system use will be without much effort (Davis 1989). Although research on IS/IT system usage have concluded that PU is important in predicting adoption, many studies have not found a direct relationship between PEOU and IS/IT adoption. TAM argues that PEOU influences users' adoption of IS/IT either directly or indirectly through PU (Davis et al. 1989), an argument that has also been posited by other studies (for example., Adams et al. 1992). The role of PEOU in TAM, however, remains controversial in that some studies show that PEOU does directly affect either self-reported use or intended IT use. PEOU is a measure of the evaluations of users' ease to use technology and how easily they learn to use it. It therefore deals with motivations based on intrinsic side of technology use especially the process involved in using the given technology. PEOU affects adoption when characteristics such as navigational use add to the importance of the outcome to which the technology is used.

In their study, (Venkatesh and Davis 2000) argued that PEOU directly and positively affects the adoption of IS. The significance of PEOU is supported by studies on self-efficacy done by (Bandura 1982). He defined self –efficacy as verdicts of how well one can perform activities that are required to deal with probable circumstances and posits that in any situation, behavior would be best anticipated by taking into account self-efficacy and outcome beliefs-related to the magnitude to which behavior, once well executed, is thought to be connected to value incomes (Davis 1969). Additionally, studies on adoption of innovations also emphasize the important role of PEOU. In a meta-analysis by Tornatsky and Klein (1982), they found that complexity that closely parallels PEOU was significantly related to a broad spectrum of types of innovations.

The dotcom phase ushered in an electronic alternative to brick and mortar banking, starting with direct online payments. Now, banking has gone vastly electronic, offering full-fledged services from online account opening to remittances. Customers have turned cautious in the wake of the global financial crisis, spending more time monitoring their savings - understandably, the convenience and ease of Internet banking makes it an attractive channel for the tech-savvy. Analysts predict that the penetration of online banking will reach nearly 40% among all adult customers by 2015. They have also found that although customers still use the branch more, the increased adoption of online banking has reduced the number of walk-ins (Wang, et al 2003).

Besides the Internet, mobile and self-service kiosks are driving financial behavior and the distribution of such products. In fact, mobile banking has gone one step further to emerge as a real alternative for those who are not comfortable using the Internet, but can operate a mobile

phone nonetheless, and has thus become the channel for financial inclusion in many parts of the world. With the banking customer base being dominated by younger generations in many parts of the world, branchless banking delivery, via Internet, mobile and other emerging channels, is set to gain further momentum. One in four customers banks over multiple channels, amongst the young, educated and high salary earners of the country (PWC, 2011).The study investigated the influence of Perceived ease of use on customers' adoption of digital banking services.

### 2.6 Theoretical Framework: Technology Acceptance Model (TAM)

Adoption of technology research suggests that when users are presented with new IS/IT technology, there are several factors that influence their decision to adopt it (Davis 1989, Venkatesh & Davis 2000, Wang et al. 2003). Banks needs to understand the reasons for customers' acceptance or rejection of IS. Several theories offer insights into the user acceptance of IS. The theory that has received the most attention is the Technology Acceptance Model (TAM) (Davis 1989, Davies et al. 1989) which was adopted from the Theory of Reasoned Action (TRA) (Fishbein et al. 1975, Ajzen & Fishbein 1980). Other theories that explain customers' willingness to use IT and cited mostly in regards to online banking include; The Theory of Planned Behavior (TPB) (Ajzen 1985) and the Decomposed Theory of Planned Behavior (DTPB) (Taylor et al. 1995).

TAM is a theoretical framework that predicts user adoption of IS and also used in diagnosing design problems in the system before it is presented to user. It was developed (Davis 1989) to solve an important dilemma in the field of IS/IT, that of users unwillingness to adapt new technologies. TAM posits that PU and PEOU predicts attitude toward use of a technology

which subsequently predicts the behavioral intention to use in turn predicting the actual adoption and usage of that technology (Davis 1989). It suggests that users' intention to adapt to new technology is influenced by how and when they will use the system, i.e. their behavioral intention to use the system which is in turn influenced by their attitudes in using the system and the perceived usefulness (PU) of the system. Davis (1989) conceptualized PU as the degree to which users believe that using a system will increase their productivity. Perceived ease of use (PEOU) on the other hand is the level by which users believe that system use will be without much effort (Davis 1989).

PU had a direct influence on users' intentions to use while PEOU affects users behavioral intention indirectly through PU and their attitudes. TAM has been found to be an economical and powerful model in determining the influences of use of systems. It is also a useful tool for planning systems as designers have control over its usefulness and easiness (Yaghoubi 2010). Behavioral intention refers to the strength by which a user is willing to exert effort in performing a behavior while attitude on the other hand refers to the user's positive and negative consideration regarding a behavior in question. Several studies have been done validating the model. For example, it was employed to study user acceptance of information security (Johnson 2005) and the World Wide Web (Lederer et al. 2000). Further to the interactions posited by TAM, many studies have also been done on antecedents of perceived usefulness and perceived ease of use (Lederer et al. 2000). Others have disregarded attitude toward use and/or intention to use but instead concentrated on the direct consequence of ease of use and usefulness on system usage with even several studies suggesting that TAM may be applied in areas outside of end-user and technology acceptance (Agarwal et al. 1999; Hu et al. 1999).

While many researchers agree that both PU and PEOU suitably predict user's acceptance of IS/IT systems (Al-Ghatani 2001; Venkatesh et al. 2003), some limitations have been noted from previous studies including involving students as sample and users reporting their own usage (Legris et al. 2003). TAM also does not explain other variable factors such as the characteristics of the system, training and organizational structures' role as an external variable ((Davis et al., 1989). For example studies by (Gefen et al. 2003 & Khalil & Pearson 2007) concluded that trust was an additional important factor in determining the acceptance of internet banking. Chau & Lai (2003), argue therefore that there is a need to extend the validity and applicability of TAM so as to incorporate other users, technologies and diverse organizational contexts. Fishbein and Ajzen (1975) argue that users' behavioral attitudes can be influenced indirectly by external stimuli such as system characteristics which influence their salient beliefs on system usage. Sabherwal et al. (2004) in another study have also suggested that system quality affects PU and PEOU. In his study, (Davis 1989) acknowledges that future IS/IT acceptance studies will need to explore the effect of variables on PU, PEOU and user acceptance.

## 2.7 Conceptual Framework

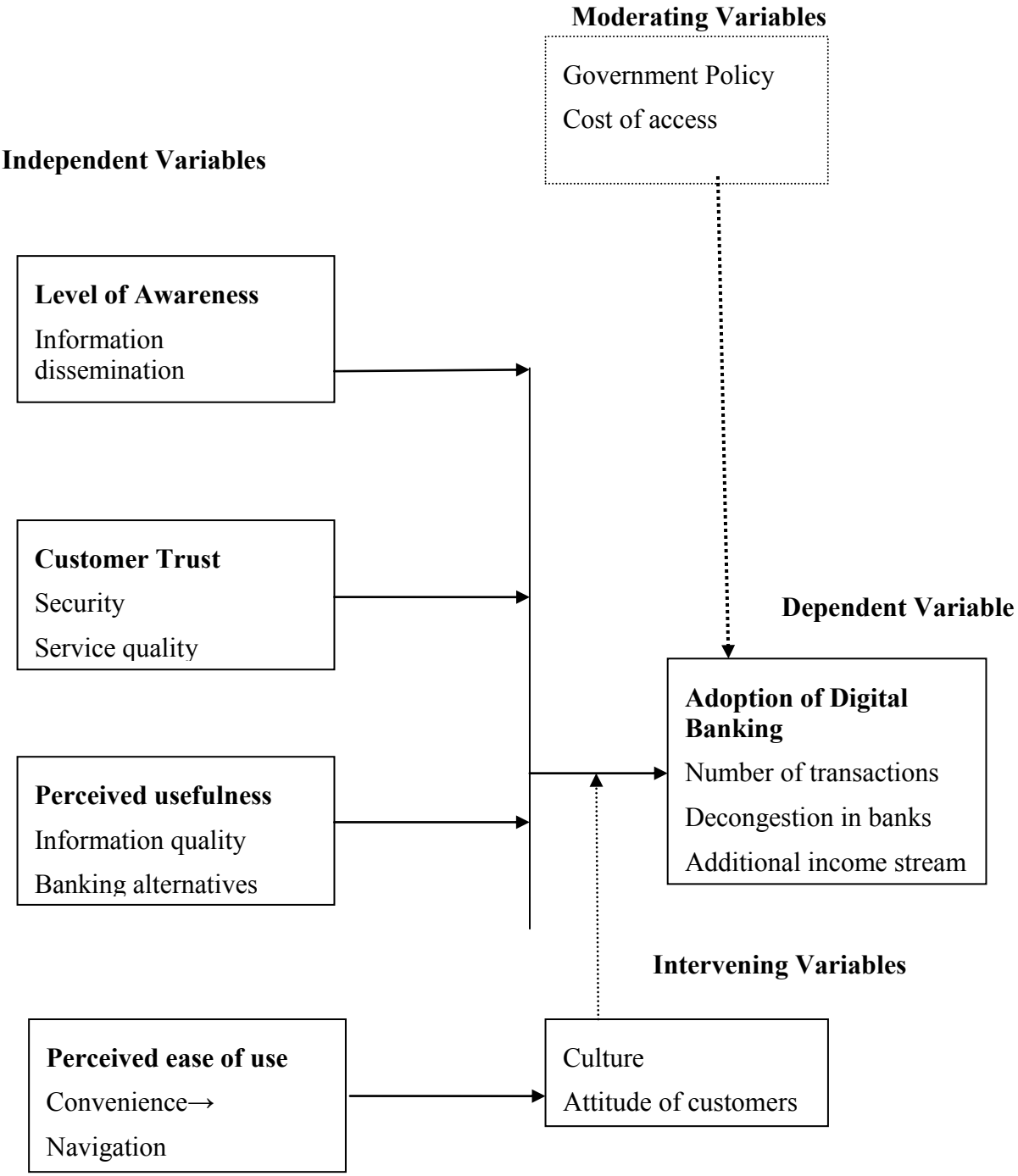


**Figure 1 Conceptual Framework**

## 2.8 Summary of Conceptual Framework

The conceptual framework shows the relationship between the Independent variables and the Dependent Variable. The independent variables consist of awareness, trust, perceived usefulness and perceived ease of use as influences towards the adoption of digital banking services by customers in Kenya. In the model, there are also some moderating and intervening variables that will not so much form part of the study.

Awareness of the importance of digital banking and also of the services that are available on offer is one of the variables in the research. The indicators of this variable include the dissemination of information by the financial institutions and also consumer training and advertisements to the potential users in order to empower them.

Trust is also one of the factors that was looked at as an influence towards the adoption of digital banking services by customers in Kenya. Some aspects of trust will be considered in terms of system security and the financial risks that are involved and also that of service quality. This is of importance in that customers need the assurance that the system will not fail them when they are in use.

Perceived usefulness had the indicators on the quality of information, the numerous alternatives that exist in the provision of digital banking services and of paramount importance the productivity that emanates from the employment of these services. These will in the long run, together with other variables be used to establish the level of acceptance or rejection of the services by banking institutions in the country by the target group.

Last of the independent variables is the perceived ease of use. This represents customers' views towards navigation in terms of simplicity or complexity of system use in digital banking. More often than not, this will also bring out the aspect of literacy levels of the individual users in the country. Ease of use also brings about the aspect of convenience where a customer can access the services with minimal or no outside influence from wherever on an end to end basis.

The dependent variable had its indicators as dictated upon by the independent variables. The indicators included additional income stream, decongestion of the banking halls referred to as the brick and mortar banking and opening up of banking opportunities to customers in far of areas thus financial inclusion for poverty alleviation. This will have a positive effect to both the financial institutions in terms of revenue streams and more importantly to the indigenous local communities who can get access to financial possibilities for growth.

In the model, there are also some moderating and intervening variables that were not be part of the research study. These variables included government policies and the cost implications of using the services. The issues of customer attitude and culture which in some ways in influences the adoption of digital banking that involves technology were also part of the study.

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.1 Introduction

This chapter outlines the research methodology used for the study. Specifically the chapter presents the type of research design, target population, sample and sampling procedures, data collection, and methods of data analysis

## 3.2 Research Design

A research design is the arrangement of conditions for collection and analysis of data in a manner that seeks to combine relevance to the research purpose with economy in procedure. Kothari (2004), states that it is the conceptual structure within which research is conducted, and constitutes the blue print for collection, measurement and analysis of data. The study was a descriptive survey design since it allowed the researcher to describe record and analyze conditions of the respondents in their current state. The major purpose of descriptive research is the description of the state of affairs that currently exist. This helped describe the relationship between the independent and the dependent variables and quantitative approach was then used to provide summary information where inferences were made from the data obtained.

## 3.3 Target Population

Cooper and Schindler (2001) defined population as the total collection of elements about which the researcher wishes to make some inferences. The target populations were customers of 4 Banks in Thika comprising namely Co-operative, Equity, KCB and Family Banks. This

is because the 4 banks are the pioneers of digital banking in the country and have the highest number of client base and market presence.

The population from the said branches may give a good representation for sampling and respondents. The branches have a total of approximately 282,877 customers according to the figures provided by the banks. Thika was selected as it is a rapidly growing town and the commercial center of Kiambu County. It is a center of light industry especially in food, cloth and horticulture production as well as many commercial, manufacturing and agricultural areas thus attracts wage laborers and salaried personnel from other parts of the country. Several universities and major colleges are also situated in the proximity of the town thus attracting many students. This population compromises the core of the unbanked and those that are beginning their financial relationships thus making Thika attractive study location. The customers at the banking halls were the best respondents for the study as they are directly affected and would therefore provide valuable information on the adoption of digital banking that would not be provided by the bank officials or other bank agents.

### 3.4 Sample and Sampling Technique

Sampling is a research technique where a set of individual units, drawn from some definable population and generally a small proportion of the population, is used to make inferences that are intended to be applied to the population (Berg & Lune, 2012). According to the sample size table by Krejcie and Morgan (1970) - Appendix 3, for a population size of more than 75,000, the optimum sample size is 384. The study had inadequate resources to obtain a list of the total population and therefore secured a sampling frame from customers coming into the bank for transactions.

The 384 respondents were chosen as per the table below

**Table 3.1 Distribution of samples as per population**

| | Bank | | | | |
|---|---|---|---|---|---|
| | Co-op | KCB | Equity | Family | Total |
| Population | 56,723 | 80,296 | 97,239 | 48,619 | 282,877 |
| Sample | 77 | 109 | 132 | 66 | 384 |

Cooper and Schindler (2001) define sampling technique as the process by which inference is made to the whole by examining only a part. The purpose of sampling is to provide various types of statistical information of a qualitative and quantitative nature about the whole by examining a few selected units; the sampling method is the scientific procedure of selecting those sampling units which would provide the required estimates with associated margins of uncertainty, arising from examining only a part and not the whole. Sampling has a greater scope than a complete enumeration regarding the variety of information by virtue of its flexibility and adaptability and the possibility of studying the interrelations of various factors.

The study used a non-probability technique where convenience sampling was used. Convenience sampling, also sometimes referred to as accidental or availability sampling relies on subjects that are available or are easy to access (Berg & Lune, 2012). This means that research assistants randomly approached bank customers in the banking hall as they waited to be served and administered the questionnaires to those customers that gave their approval. This continued until the sample size was achieved.

### 3.5 Research Instruments

Data was collected using a Bank Customers Questionnaire (BCQ). The questionnaire consisted of two sections. The first section comprised of questions on the demographic characteristics of the respondents in terms of gender, age, education level and profession. The second section had questions regarding the variables in the research namely; awareness, trust of banks and agents and also of the technology in the adoption of digital banking, perceived usefulness and consequently, questions on perceived ease of use of the digital banking processes and outlets.

Five-point Likert scales with end points of strongly disagree and strongly agree were used to collect responses with additional open ended questions that sought to seek additional ideas and suggestions on digital banking services.

#### 3.5.1 Piloting the Instrument

Prior to the actual study, a pilot of the questionnaire instrument was done through review by professional peers then be pre-tested on ten percent of respondents who were 39 in number not to be targeted in the study sample to identify or discover any ambiguities, errors, inadequate answers or highlight any confusing questions. This was in order to refine the questionnaire to ensure that the data collected would be relevant and focused in addressing the objectives of the study and that vague questions are reviewed to convey the same meaning to all respondents (Mugenda and Mugenda, 2003). This was done in Commercial Banks in Ruiru where the pilot sample were chosen through convenience sampling. The questionnaire was then revised in relation to the findings which was then used for the final study.

### 3.5.2 Validity of the Instrument

Validity is that quality of a data gathering instrument that enables it to measure what it is intended to measure. This is the usefulness of the data and not the instrument. It was achieved through reviewing by professional peers. The use of content validity in this case yielded a logical judgment as to whether the instrument covered what it was supposed to cover. Validity was also achieved by ensuring that all respondents understood the items on the questionnaire to avoid misunderstanding and inconsistencies. Response options are also provided for most questions to ensure that answers are in tandem with the questions they are meant to measure. The validity of the instrument was enhanced through appraisal of the tools and confirmation by the project supervisor who is a professional in the field.

### 3.5.3 Reliability of Instrument

Reliability of an instrument seeks to answer the question whether scores are stable over time when the instrument is administered repeatedly. It is the degree of consistency that the instrument demonstrates on repeat trials. To ensure reliability, split half method of internal consistency was used. The measure was split into two equal parts and each of them treated as a separate measure. Each part was then scored accordingly and the scores correlated through the use of the spearman Brown Prophesy formula with the aid of Statistical Package for Social Scientists (SPSS). The higher the correlation coefficient between the two sets, the greater the reliability of the instrument will be. The general convention in research has been prescribed by Nunnally and Bernstein (1994) stating that one should strive for reliability values of 0.70 or higher thus a correlation coefficient (r) value of above that value will be acceptable.

### 3.6 Data Collection Techniques

Data was collected from the respondents who are the bank customers through the use of Bank Customer questionnaire. This provided an efficient way of collecting data from large sample size of 384. It was also more convenient than interviews as they were administered to the respondents to fill and return once they are done.

### 3.7 Methods of Data Analysis

Data analysis involves computation of measures along with searching for relationship patterns that exist between the dependent and the independent variables .The first step in the data analysis process was editing of data to detect any errors and omissions and certify that minimum data quality standards are achieved. The information gathered was then coded and entered for analysis into Statistical package for social scientists (SPSS version 21). The data is presented through tables, figures, charts and graphs. The study used both descriptive and inferential statistics to analyze the data. Students't-test was used to establish if there are any significant differences between genders. ANOVA was used establish if there are any significant difference in the customers' responses toward digital banking services and age, status of employment, banks and highest level of education. To test relationships between the variables a regression analysis was done.

### 3.7 Ethical Consideration

This study ensured that research ethics were adhered to. The researcher sought consent from the National Council of Science and Technology. The researcher then visited the Bank managers of the four banks and explained his intention as well as seek consent to involve their customers in the study. Finally consent was also sought from the customers before

filling the questionnaire. Participation was voluntary and the customers signed the voluntary consent forms before filling in the questionnaires. The objectives of the study were explained to them. They were also assured that confidentiality was to be observed and the findings are be used for the purpose of the study only.

### 3.8 Operational Definition of Variables

Operationalizing or operationally defining a concept to render it measurable is done by looking at the behavioral dimensions, indicators, facets or properties denoted by the concept. These are then translated into observable and measurable elements so as to develop an index of the concept. Measures can be objective or subjective.

**Table 3.2 Operational Definition of variables**

| Research objective | Type of variable | Indicator | Measurement scale | Type of data | Analysis technique |
|---|---|---|---|---|---|
| Determining whether Awareness of D.G influence adoption | Independent | Advertisements<br>Information dissemination | Nominal | Quantitative | Descriptive |
| Determining whether Trust Influences adoption of Services | Independent | Frequency of transaction<br>Service quality<br>Security | Nominal<br>Nominal | Quantitative<br>Quantitative | Percentage frequency<br>Percentage frequency |

| | | | | | |
|---|---|---|---|---|---|
| Determining whether Perceived usefulness Influences adoption of Services | Independent | Payments made<br>Banking alternatives<br>Profession | Ordinal<br><br>Ordinal | Quantitative<br><br>Quantitative | Percentage frequency<br>Percentage frequency |
| Determining whether Perceived ease of use Influences adoption of digital banking services | Independent | Education level<br>Age<br>Navigation | Ordinal<br>Ordinal | Quantitative<br>Quantitative | Chi square<br>Percentage frequency |

# CHAPTER FOUR

# DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

## 4.1 Introduction

This chapter presents, interprets and discusses the research findings and associated issues. For systematic presentation of data, the chapter specifically analyzes the response rate, demographic characteristics of the participant and the factors influencing the digital banking services such as awareness, trust, perceived usefulness and perceived ease of use.

## 4.2 Response Rate

The study had a sample size of 384 respondents from the four major banks in terms of number of customers in Thika town. The targeted banks were Co-operative Bank of Kenya Ltd, Kenya Commercial Bank Ltd, Equity bank ltd, and Family bank limited. Proportionate sampling was done according to the number of customers each bank has. The distinction was 77, 109, 132 and 66 for the co-op bank, KCB, Equity and Family Bank respectively. After filling of the questionnaires, they were checked for completeness. A total of 366 (95.3%) questionnaires were returned, however, 33(8.6%) were discarded as they were not completely filled. A total of 339 questionnaires were fully completed representing a response rate of (88.3%). According to Mugenda and Mugenda (2003) a response rate of 70% and over is excellent. The response rate of (88.3%) was therefore excellent for data analysis. The high response rate could be attributed to the fact that the respondents were issued with the questionnaires as they queued for services in the banking hall and they were collected but they left the bank. However, the 33 (8.6%) incomplete questionnaires were due to fact that

some respondents were either semi-illiterate or were served before completing or were in a hurry to leave the bank after being served.

### 4.3 Demographic Characteristics of the Respondents

The study was interested with establishing the following characteristics of the respondents' gender, age, highest level of education reached and employment status. These characteristics are discussed in this section.

#### 4.3.1 Distribution of the Respondents by Gender

The study sought to investigate the distribution of the respondents by gender. Table 4.1 presents the distribution of the respondents by gender.

**Table 4.1 Distribution of the Respondents by Gender**

| Gender | Bank | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Co-op | | KCB | | Equity | | Family | | Total | |
| | n | % | n | % | n | % | n | % | n | % |
| **Male** | 48 | 4.2 | 60 | 17.7 | 81 | 23.8 | 28 | 8.3 | 217 | 64 |
| **Female** | 18 | 5.3 | 34 | 10.0 | 43 | 12.7 | 27 | 8.0 | 122 | 36 |
| **Total** | **66** | **19.5** | **94** | **27.7** | **124** | **36.6** | **55** | **16.3** | **339** | **100** |

From table 4.1, it can be observed that 217(64%) of the respondents were male while 122 (36.0%) of were females. This shows that there disparity in access to banking services probably because women in Kenya are marginalized due to cultural practices. Equity bank

had the highest number of respondents 124(36.6%), followed by KCB 94(27.7%), Co-Operative Bank 66(19.5%) and 55(16.3%) were customers of family bank. This followed the distribution of customer's base of the banks. Equity has the highest number of customers, followed by KCB, Cooperative bank and the last among them are of family bank. There was near gender parity in family bank at 28(8.3%) and 27 (8.8%) for males and females respectively. This can be attributed to the fact that Family Bank was licensed as a bank recently and is the wake of the new constitution which has enlightened the Kenyan women. The highest disparity was observed in the Cooperative Bank.

### 4.3.2. Distribution of the Respondents by Age

The study also sought to establish the distribution of the respondents by age. The results were presented in table 4.2

**Table 4.2 Distribution of the Respondents by Age**

| Gender | Bank | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Co-op | | KCB | | Equity | | Family | | Total | |
| | n | % | n | % | n | % | n | % | n | % |
| **18-27** | 11 | 3.2 | 24 | 6.2 | 29 | 8.6 | 5 | 1.5 | 76 | 22.4 |
| **28-37** | 38 | 11.2 | 46 | 13.6 | 58 | 17.1 | 27 | 8.0 | 174 | 51.3 |
| **38-47** | 15 | 4.4 | 19 | 5.6 | 33 | 9.7 | 17 | 5.0 | 58 | 17.1 |
| **Over 48** | 2 | 0.6 | 8 | 2.4 | 4 | 1.2 | 6 | 1.8 | 31 | 9.1 |
| **Total** | **66** | **19.5** | **94** | **27.7** | **124** | **36.6** | **55** | **162** | **339** | **100** |

The table 4.2 shows that majority 174 (51.3%) of the customers were aged 28-37years, followed by 18-27 years 76 (22.4%), 58 (17.1%) were aged 38-47years while the least 31 (9.1%) were aged over 48years. The trend is also true for all banks. These results could be attributed to the fact that those in the 28-37 age group trust digital banking as they as belong to the digital age.

### 4.3.3 Highest Level of Education

Beyond the age and gender distribution, the study was also interested in establishing the level of education of the respondents as it may influence digital banking services use. The results are presented in table 4.3.

**Table 4.3 Distribution of Respondents by Highest Level of Education**

| Highest level of Education | Bank | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Co-op | | KCB | | Equity | | Family | | Total | |
| | n | % | n | % | n | % | n | % | n | % |
| **O level** | 47 | 8.0 | 52 | 15.3 | 74 | 21.8 | 28 | 8.3 | 144 | 42.5 |
| **A Level** | 7 | 2.1 | 0 | 0 | 9 | 2.7 | 2 | 0.6 | 19 | 5.6 |
| **Diploma** | 12 | 3.5 | 15 | 4.4 | 21 | 6.2 | 11 | 3.2 | 59 | 17.4 |
| **Degree** | 20 | 5.9 | 19 | 5.6 | 20 | 5.9 | 10 | 2.9 | 69 | 20.4 |
| **Masters** | 6 | 1.8 | 7 | 2.1 | 5 | 1.5 | 3 | 0.9 | 21 | 6.2 |
| **PhD** | 1 | 0.3 | 1 | 0.3 | 0 | 0 | 0 | 0 | 2 | 0.6 |
| **TOTAL** | **66** | **19.5** | **94** | **27.7** | **124** | **36.6** | **55** | **16.2** | **339** | **100** |

From table 4.3, it can be noted that majority144(42.5%) of the respondents had O- Level education, followed by degree holder 69 (20.4%), diploma holder 59 (17.4%), next were the Masters Degree holders 21 (6.2%), A-Level 19 (5.6%) and the least were the PHD holders or 2 (0.6%). These results show that majority of the users have o-level education as they were born in the digital era. They are likely to adopt digital banking as they the likely designers of the software used in digital banking. In addition, they have been taught in school the advantages of digital banking. Also, most are computer savvy. Those highly educated could have reservations as they are more versed with the analog banking.

### 4.3.4 Employment Status

The study was also interest in establishing the employment status of the respondents. It is likely to influence the banking service. The results are tabulated in table 4.4.

**Table 4.4 Distribution of the Respondents by Employment Status**

| Employment status | Bank | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Co-op | | KCB | | Equity | | Family | | Total | |
| | n | % | n | % | n | % | n | % | n | % |
| **Employed** | 18 | 5.3 | 37 | 10.9 | 11 | 12.1 | 20 | 5.9 | 116 | 34.2 |
| **Self employed** | 32 | 9.4 | 48 | 14.2 | 57 | 16.8 | 22 | 6.5 | 159 | 46.9 |
| **Unemployed** | 16 | 47 | 11 | 3.2 | 26 | 7.7 | 13 | 3.8 | 53 | 15.6 |
| **Total** | **66** | **19.4** | **94** | **27.7** | **124** | **36.6** | **55** | **16.2** | **339** | **100** |

The table 4.4 show that majority 150 (46.9%) of the respondents were self-employed, followed by the employed 116 (34.2%), while the unemployed were least at 53 (15.6%). The trend is similar across all the banks. The unemployed could be students, unemployed spouses or children of business owners in Thika town whose use the banking services. The scenario could be attributed to the fact that Thika town is a business with small and medium sized business enterprise hence the self-employed has surpassed the banking services.

### 4.4 Digital Banking Services

In this study digital services were limited to agency banking, mobile banking and internet banking. These three digital services were investigated in relation to the four banks and the results are tabulated in table 4.5

**Table 4.5 Type of Digital Banking Services by Bank**

| **Types of Digital Banking Services** | **Bank** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Co-op** | | **KCB** | | **Equity** | | **Family** | | **Total** | |
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| Agency | 23 | 6.8 | 19 | 5.6 | 43 | 12.7 | 14 | 4.1 | 99 | 29.2 |
| Mobile | 36 | 10.6 | 64 | 18.8 | 69 | 27.7 | 36 | 10.6 | 205 | 60.5 |
| Internet | 7 | 2.1 | 11 | 3.2 | 12 | 3.5 | 6 | 1.8 | 36 | 10.6 |
| **Total** | **66** | **19.5** | **94** | **27.7** | **124** | **36.6** | **55** | **16.2** | **339** | **100** |

The table 4.5 shows that majority of the participant 205 (60.5%) prefer mobile banking, followed by agency banking 99 (29.2%) and those who preferred digital services were 36

(10.6%). Several reasons could be attributed to preference of mobile banking. First it is convenient, that is it can be done at the convenience of the user whether at home or at work or at leisure joints. Secondly, it only requires a handset unlike the internet banking that requires a computer. It does not require the services of an agent and ensures utmost privacy. The trend is true across all the banks. Internet banking in the least preferred perhaps because the users need to access a computer and computer literate. In addition, there are fears of hacking. Those who prefer mobile banking, agency banking require one to travel to the agent, may not preserve privacy and because of security reasons large amount cannot be withdrawn from such outlets.

### 4.5 Factors Influencing Digital Banking Services

The main objective of the study was to investigate the factors that influence the adoption of digital banking services in Kenya. To this end four construct of digital banking concept were investigated. They included awareness, trust, perceived usefulness and perceived ease of use of digital banking services. These issues are discussed in this section.

#### 4.5.1. Awareness of Digital Banking Services

The construct of awareness was captured using a five-point Likert-scale consisting of two questions. The scale was scored as follows: Strongly agree-5 point, agree-4 points, don't know-3points, disagree-2points and strongly agree-1 point respectively. The mean scores were computed and the results presented in table 4.6

**Table 4.6 Awareness of Digital Banking Services**

| Awareness | Bank | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Co-op | | | KCB | | | Equity | | | Family | | | Total | | |
| | n | *M* | *SD* | n | *M* | *SD* | n | *M* | *SD* | n | *M* | *SD* | n | *M* | *SD* |
| X | 64 | 4.09 | .818 | 94 | 4.43 | .595 | 124 | 4.35 | .663 | 55 | 4.44 | .663 | 339 | 4.33 | .665 |

Key:

X=Received enough information about digital banking service

It can be noted from table 4.6 that respondents agreed to have received enough information about digital banking service (M = 4.33, SD =.655). The respondents from the family bank mostly agreed (M= 4.51, SD = .663) to have received enough information about the benefits of digital banking services. Perhaps this could be attributed to the fact that family bank was last held promotion recently.

### 4.5.2 Awareness of Digital Banking Services by Gender

The study also sought to establish the perceived usefulness of digital banking services by gender. An independent t-test was computed using SPSS program and the result presented in table 4.7

**Table 4.7 Perceived awareness of Digital Banking Services by gender**

| Gender | n | *M* | SD | *t* test | | |
|---|---|---|---|---|---|---|
| | | | | t | df | Sig |
| **Male** | 217 | 4.38 | .408 | 1.383 | 337 | .168 |
| **Female** | 122 | 4.32 | .347 | | | |

Table 4.7 shows that males had a higher mean score (M = 4.38, SD = .408) that the females (M= 4.32, SD = .347). The t test shows that there no significant difference in the perception of awareness between males and females, t (337) = 1.383, p= .168, α = .05. The study concluded that there was no significant difference between the male and females in their perception of the awareness of Digital Banking Services.

### 4.5.3 Awareness of Digital Banking Services by age of the Respondents

The study was also interest in establishing whether there is any significance difference in the awareness of digital banking service by age of the customer. The mean score values of perceives awareness by the different ages are presented in table 4.8

**Table 4.8 Perceived awareness of digital banking services by age of the customer**

| Age (years) | n | *M* | *SD* |
|---|---|---|---|
| 18-27 | 76 | 4.23 | .451 |
| 28-37 | 174 | 4.61 | .359 |
| 38-47 | 58 | 4.40 | .314 |
| Over 48 | 31 | 4.24 | .330 |
| **Total** | **339** | **4.36** | **.387** |

Table 4.9 shows the 174 customers aged 28-37yrs had a higher awareness (M = 4.61, SD= .259), followed by those aged 38-47 years (M= 4.40, SD = .314), next were those aged over 48 years (M = 4.24, SD= .330) while those aged 18-27 years were least aware (M = 4.23, SD= .451). An analysis of variance (ANOVA) was then computed to find out whether there was any significant difference among the various ages. The results are presented in table 4.9

**Table 4.9 ANOVA for the perceived awareness of Digital Banking Services by age**

| Source | Sum of squares | df | Mean square | F | Sig. |
|---|---|---|---|---|---|
| Between groups | 4.142 | 3 | 1.381 | 9.934 | .001 |
| Within groups | 46.561 | 335 | .139 | | |
| Total | 50.704 | 338 | | | |

From Table 4.9, the ANOVA shows there was a significant difference in the perceived awareness in DBS, $F(3,335) = 9.934$, $p = .001$, $\alpha = .05$. The study concluded that there was a

significant difference in the perceived awareness of digital banking services by age. The respondents aged 28-37 years were more aware about digital banking services than the rest.

### 4.5.4 Awareness of Digital Banking Services by level of education

The mean scores of the perceived ease of use by level of education were computed and ANOVA carried out to establish if there is any significant difference among them. The results are presented in table 4.10 and 4.11 respectively.

**Table 4.10 Perceived Awareness of Digital Banking Services by Level of Education**

| **Highest level of Education** | **n** | ***M*** | ***SD*** |
|---|---|---|---|
| O level | 123 | 4.33 | .248 |
| A-Level | 19 | 4.33 | .239 |
| Diploma | 85 | 4.33 | .229 |
| Degree | 89 | 4.36 | .198 |
| Masters | 21 | 4.52 | .231 |
| PhD | 2 | 4.53 | .000 |
| **Total** | **339** | **4.87** | **.230** |

The table 4.10 shows that the PhD holders had the highest awareness score on digital banking services (M = 4.53, SD = .000), followed by Master degree holders (M = 4.52, SD = .231), degree holders (M= 4.36, SD =.198 ) while the Diploma, A-level and O-level graduates had the same score on perception of awareness of digital banking services (M = 4.33, SD= .229).

**Table 4.11 ANOVA for the perceived awareness of Digital Banking Services**

| Source | Sum of squares | df | Mean square | F | Sig. |
|---|---|---|---|---|---|
| **Between groups** | .321 | 5 | .264 | 1.782 | .116 |
| **Within groups** | 49.383 | 333 | .148 | | |
| **Total** | 50.704 | 338 | | | |

Form Table 4.11, an analysis of variance shows that there was no any significant difference in the perception of awareness with the level of education, F (5,333) = 1.782, p =.116, α = .05.The study concluded that there was no significant difference in the perceived awareness of digital banking services by Level of education.

### 4.5.5 Awareness of Digital Banking Services by status of employment

The study was also interested in establishing the perceived awareness of digital banking services by status of employment. The mean scores of three groups of respondents on their perceived awareness of digital banking services are presented in table 4.12

**Table 4.12 Perceived Awareness of DBS by Status of Employment**

| Status of employment | n | *M* | *SD* |
|---|---|---|---|
| Employed | 131 | 4.37 | .379 |
| Self-employed | 164 | 4.36 | .391 |
| Unemployed | 44 | 4.32 | .405 |
| **Total** | **339** | **4.36** | **.387** |

Table 4.12 shows that total perceived awareness in DBS (M= 4.36, SD = .387) was high. The respondents agreed that they were aware of the digital banking services. The employed had the highest score (M = 4.37, SD = .379) followed by the self-employed (M = 4.36, SD = .391) and the least were the unemployed (M = 4.32, SD = .405). An analysis of Variance (ANOVA) was then computed and the results are presented in table 4.13.

**Table 4.13 ANOVA on perceived awareness of Digital Banking Services by status of employment**

| Source | Sum of squares | df | Mean square | F | Sig. |
|---|---|---|---|---|---|
| **Between groups** | .104 | 2 | .052 | .344 | .709 |
| **Within groups** | 50.600 | 336 | .151 | | |
| **Total** | 50.704 | 338 | | | |

From Table 4.13, ANOVA shows that there was no any significant difference in the perception of awareness by the status of employment of the customer, F (2,336) = .344, p = .709, α=.05. The study concluded that the no significant difference in the perceived awareness of digital banking services by status of employment of the customers.

The study also aimed at establishing the influence of perceived awareness of digital banking services on adoption of DBS. The values of the awareness scores were correlated with those of the number of times of a customer uses the DBS per month. The results are presented in table 4.14

**Table 4.14 Correlation between the perceived awareness of DBS and adoption of the service**

| | | Awareness DBS | No. of times used the DBS per month |
|---|---|---|---|
| **Awareness of DBS** | Pearson Correlation | 1 | .584** |
| | Sig. (2-tailed) | | .001 |
| | n | 339 | 339 |
| **No. of times used the DBS per month** | Pearson Correlation | .584** | 1 |
| | Sig. (2-tailed) | .001 | |
| | n | 339 | 339 |

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

Table 4.14 shows that there is a strong positive correlation between awareness of DBS and adoption of DBS , r (339) = .584, p = .001, α =. 05. This implies that the more customers are aware of the DBS the more they are likely to use the service.

### 4.5.6 Trust in Digital Banking Services by Bank

Information about the construct of trust in digital banking service was obtained from a five Likert scale consisting of two questions. The total mean score of the questions were computed using SPSS program and the result are presented in table 4.15.

**Table 4.15 Trust in Digital Banking Service as Perceived by the Respondents**

| Construct | Bank | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Co-op | | | KCB | | | Equity | | | Family | | | Total | | |
| | n | *M* | *SD* | n | *M* | *SD* | N | *M* | *SD* | n | *M* | *SD* | n | *M* | *SD* |
| **Trust** | 66 | 2.73 | .724 | 94 | 2.43 | .741 | 124 | 2.95 | .938 | 55 | 2.28 | .901 | 339 | 2.65 | .883 |

Table 4.15 shows that the customers of Equity Bank had a higher trust in DBS (M= 2.95, SD = .938), followed by Co-op bank (M= 2.73, SD = .724), KCB Bank (M= 2.43, SD = .741) and the last was family bank (M= 2.28, SD = .901). Analysis of variance (ANOVA) was computed to establish whether there was any significant difference in the mean score of the various banks. The results are presented in table 4.16.

**Table 4.16 ANOVA of the Perceived trust in Digital Banking Services by bank**

| Source | Sum of squares | df | Mean square | F | Sig |
|---|---|---|---|---|---|
| **Between groups** | 23.637 | 3 | 7.879 | 10.998 | .000 |
| **Within groups** | 239.983 | 335 | .716 | | |
| **Total** | **263.619** | **338** | | | |

From table 4.16, the ANOVA shows that there was a statistically significant difference in the perceived trust in DBS by the customers of various banks, $F(3,335) = 10.998$, $p < .0005$, $\alpha = .05$. The study concluded that there was a significant difference in the trust of digital banking service between the banks.

### 4.5.7 Trust in Digital Banking Services by Gender

The study also evaluated the effect of gender on the perceived trust in digital banking services. An independent t-test was computed and the result are presented in table 4.17

**Table 4.17 Trust in Digital Banking Service by Gender**

| Gender | n | *M* | *SD* | *t* test | | |
|---|---|---|---|---|---|---|
| | | | | T | df | Sig. |
| **Male** | 217 | 2.64 | .858 | -0.333 | 337 | .739 |
| **Female** | 122 | 2.68 | .929 | | | |

Table 4.17 show that the females had a higher trust in DBS (M= 2.68, SD = .929) than the males (M= 2.64, SD = .858) in the digital banking services. However, the *t* test shows that there was any significant difference in trust in DBS between males and females, absolute t (217) =.333, p = .739, α = .05. The study therefore concluded that there was no significant difference in the perceived trust in digital banking services between gender.

### 4.5.8 Trust in Digital Banking Services by Age of customer

The study was also interested in establishing whether there is any significance difference in the perceived trust in digital banking service by age of the customer. The mean score on the perceived trust in digital banking services of the different ages are presented in table 4.18

**Table 4.18 Trust in DBS by age of the customer**

| Age (years) | n | *M* | *SD* |
|---|---|---|---|
| 18-27 | 76 | 2.42 | .792 |
| 28-37 | 174 | 2.77 | .883 |
| 38-47 | 58 | 2.68 | .954 |
| Over 48 | 31 | 2.53 | .875 |
| **Total** | **339** | **2.65** | **.883** |

Table 4.18 shows the mean score (M= 2.65, SD = .883) of the trust in digital banking service by age implies that most customers don't know whether to trust digital banking services. However, the 174 customers aged 28-37yrs had a higher trust (M= 2.77, SD =.883), followed by those aged 38-47 years (M = 2.68, SD =.954), next were those aged over 48 years (M =2.53, SD = .875) while those aged 18-27 years had the least trust in DBS (M = 2.42, SD = .792). An analysis of variance (ANOVA) was then computed to find out whether there is any significance difference between the ages. The result is presented in table 4.19.

**Table 4.19 ANOVA of trust in DBS by age**

| Source | Sum of squares | df | Mean square | F | sig |
|---|---|---|---|---|---|
| Between groups | 6.972 | 3 | 2.324 | 3.033 | .029 |
| Within groups | 256.648 | 335 | .766 | | |
| **Total** | **263.619** | **338** | | | |

From table 4.19, the ANOVA shows that there was a significant difference in trust in DBS by age of the customer, F (3, 335), p = .29, α = .05. Those aged between 28-37 years have a

highest score in trust in digital banking service, followed by those aged 38-47, next those over 48 years and those aged between 18-27 years had the least trust.

### 4.5.9 Trust in Digital Banking Service by Level of Education

The study also sought to establish the influence of level of education on the trust in digital banking services. The results are presented in table 4.20

**Table 4.20 Trust in Digital Banking Services by Level of Education**

| Highest level of education | n | *M* | *SD* |
|---|---|---|---|
| **O level** | 123 | 2.5 | .752 |
| **A-Level** | 19 | 3.05 | .692 |
| **Diploma** | 85 | 2.98 | .954 |
| **Degree** | 89 | 2.57 | .922 |
| **Masters** | 21 | 2.19 | .844 |
| **PhD** | 5 | 3.00 | .000 |
| **Total** | **339** | **2.65** | **.883** |

The table 4.20 shows that the A-Level holders had the highest scores on trust in digital banking services (M = 3.05, SD = .692), followed by PhD holders (M= 3.00, SD = .000) Diploma holders (M= 2.98, .954), Degree holders (M= 2.57, SD = .922), O-Level graduates (M= 2.5, SD = .752) while those with the least score were the master degree holders (M = 2.19, SD = .844)

### 4.5.10 Trust in DBS by status of employment

The study was also interested in establishing the perceived trust of digital banking services by status of employment. The mean scores of three groups of respondents on their perceived trust of digital banking services are presented in table 4.21.

**Table 4.21 Perceived Trust in DBS by Status of Employment**

| **Status of employment** | **n** | ***M*** | ***SD*** |
|---|---|---|---|
| Employed | 131 | 2.66 | .866 |
| Self-employed | 164 | 2.64 | .901 |
| Unemployed | 44 | 2.70 | .885 |
| **Total** | **339** | **2.65** | **.883** |

Table 4.21 shows that total perceived trust in digital banking services is low (M = 2.65, p= .833). The respondents disagreed that they trusted the digital banking services. The unemployed had the highest level of trust (M= 2.70, SD = .885, followed by the employed (M = 2.66, SD = .866) while self-employed had the least trust in DBS (M = 2.64, SD = .901). This could be attributed to the first that the employed and self-employed have a lot of doubt as they were more aware about the services. ANOVA was then computed and the results were presented in table 4.22.

**Table 4.22 ANOVA on Perceived Trust in Digital Banking Services by Status of Employment**

| Source | Sum of squares | df | Mean square | F | Sig. |
|---|---|---|---|---|---|
| **Between groups** | .144 | 2 | 0.72 | .092 | .912 |
| **Within groups** | 263.475 | 336 | .784 | | |
| **Total** | **263.619** | **338** | | | |

From table 4.22, ANOVA shows that there was no any significant difference in trust in DBS by the state of employment of the customers, F (2,336) = .092, p= .912, $\alpha$ = .05. The study concluded that there was no significant difference in the perceived trust in digital banking services by status of employment.

The study also aimed at establishing the influence of customer's trust of DBS on adoption of DBS. The values of the perceived trust were correlated with those of the number of times of a customer uses the DBS per month. The results are presented in table 4.23

**Table 4.23 Correlation between the perceived awareness of DBS and adoption of the service**

| | | Awareness DBS | No. of times used the DBS per month |
|---|---|---|---|
| **Trust of DBS** | Pearson Correlation | 1 | .063 |
| | Sig. (2-tailed) | | .025 |
| | n | 339 | 339 |
| **No. of times used the DBS per month** | Pearson Correlation | .063 | 1 |
| | Sig. (2-tailed) | .025 | |
| | n | 339 | 339 |

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

Table 4.23 shows that there was a very weak correlation between trust of DBS and adoption of DBS , r (339) = .063, p = .025, α =. 05. This implies that the lower the customers trust on the DBS the less they used the service. There is need for the concerned banks to build trust so as to increase adoption of this service.

### 4.5.11 Perceived Usefulness of Digital Banking Services by bank

The mean scores of the perceived usefulness by bank were computed and the result presented in table 4.24

**Table 4.24 Means Score of Perceived Usefulness by Bank**

| **Bank** | **n** | ***M*** | ***SD*** |
|---|---|---|---|
| Coop | 66 | 4.72 | .322 |
| KCB | 94 | 4.76 | .232 |
| Equity | 124 | 4.82 | .234 |
| Family | 55 | 4.81 | .167 |
| **Total** | **339** | **4.78** | **.246** |

Table 4.24 shows the overall score (M= 4.78, SD = .246) that the respondents agreed that the digital banking services were perceived as useful. The customers from Equity Bank had the highest perception of usefulness of DBS (M= 4.82, SD = .282), followed by those from Family bank (M= 4.81, SD = .167), KCB (M= 4.76, SD = .232) and those from Coop bank had the least perception (M= 4.72, SD = .322). An analysis of variance was computed to

establish whether there was any significant difference in usefulness of DBS among customers of the four banks. The results are presented in table 4.25.

**Table 4.25 ANOVA of Usefulness of DBS among the Customers of the four Banks**

| Source | Sum of squares | df | Mean square | F | Sig. |
|---|---|---|---|---|---|
| **Between groups** | .517 | 3 | .172 | 2.887 | .063 |
| **Within groups** | 19.996 | 335 | .060 | | |
| **Total** | **20.513** | **338** | | | |

From 4.25, An ANOVA showed that there was no any statistically significant difference of perceived ease of use among the four banks, $F(3,335) = 2.887$, $p = .063$, $\alpha = .05$.

### 4.5.12 Perceived Usefulness of DBS by Gender

The study also sought to establish the perceived usefulness of digital banking services by gender. An independent t-test was computed using SPSS program and the result presented in table 4.26.

**Table 4.26 Perceived Usefulness of DBS by Gender**

| Gender | N | *M* | *SD* | *t* test | | |
|---|---|---|---|---|---|---|
| | | | | t | df | Sig. |
| **Male** | 217 | 4.80 | .236 | 2.172 | 337 | .031 |
| **Female** | 122 | 4.74 | .260 | | | |

Table 4.26 shows that males had a higher mean score on perception of usefulness of DBS (M = 4.80, SD = .236) that the females (M = 4.74, SD = .260). A t test shows there was a statistically significant difference between the gender, t (337) = 2.172, P = .031, α = .05. Males had a higher perception of usefulness of DBS than females.

### 4.5.13 Perceived Usefulness of Digital Banking Services by Age

The study also is interested in determining the perceived usefulness of digital banking services by age. The tabulated mean scores are in table 4.27

**Table 4.27 Perceived Usefulness of Digital Banking Services by Age**

| Age (yrs) | n | $\bar{x}$ | SD |
|---|---|---|---|
| 18-27 | 76 | 4.72 | .269 |
| 28-37 | 174 | 4.81 | .249 |
| 38-47 | 58 | 4.70 | .200 |
| Over 48 | 31 | 4.61 | .148 |
| **Total** | **339** | **4.78** | **.246** |

Table 4.27 shows that the average mean score was (M= 4.78, SD = .246). This showed the respondents agreed that Digital Banking Services are useful. The customers aged between 28-37 years had the highest perception of usefulness of DBS (M= 4.72, SD= .249), followed by those aged 18-27 years (M = 4.72, SD = .269), 38-47 years (M = 4.70, SD = .200) and the over 48years had the lowest perception of usefulness by DBS (M = 4.61, SD = .148). An

analysis of variance was then done to determine whether there was any significance difference in the mean scores of different age. The results are presented in table 4.28.

**Table 4.28 ANOVA on Perceived Usefulness by Age of Customer**

| Source | Sum of squares | df | Mean square | F | Sig |
|---|---|---|---|---|---|
| **Between groups** | 1.393 | 3 | .464 | 8.133 | .000 |
| **Within groups** | 19.121 | 335 | .057 | | |
| **Total** | 20.513 | 339 | | | |

From table 4.28, an analysis of variance showed that there was a significant difference in the perception of usefulness of DBS by age brackets, $F(3,335) = 8.133$, $p < .0005$, $\alpha = .05$. Therefore it was concluded there was a significant difference in the mean scores of perceived usefulness of Digital Banking Services among ages. The age bracket of 28-37 years had the highest perception of the usefulness of the DBS followed by those aged, 38-47 years, next were those aged 18-27 years while those aged over 48years had the least perception of the usefulness in DBS.

### 4.5.14 Perceived Usefulness of Digital Banking Services by Level of Education

The study also sought to establish the perceived usefulness of DBS by level of education. The result are presented in table 4.29

**Table 4.29 Perceived usefulness of DBS by level of education**

| Highest Level of Education | n | *M* | *SD* |
|---|---|---|---|
| **O Level** | 123 | 4.78 | .255 |

| | | | |
|---|---|---|---|
| **A-Level** | 19 | 4.61 | .434 |
| **Diploma** | 85 | 4.84 | .203 |
| **Degree** | 89 | 4.74 | .210 |
| **Masters** | 21 | 4.87 | .166 |
| **Phd** | 2 | 5.00 | .001 |
| **Total** | **339** | **4.78** | **.246** |

Table 4.29 shows the PhD holders had the highest perception of the usefulness of DBS (M = 5.00, SD = .001), followed by Master degree holders (M= 4.87, SD = .166), next were the diploma holders (M = 4.84, SD = .203), O level graduates (M= 4.78, SD = .255), degree holders (M= 4.74, SD = .210) and those with least perception were the A-level holders ( M= 4.61, SD = .434). An analysis of variance was computed to establish whether there was any significant difference among the levels of education. The result are presented in table 4.30

**Table 4.30 ANOVA for Perceived usefulness for the Different Levels of Education**

| Source | Sum of squares | df | Mean square | F | Sig. |
|---|---|---|---|---|---|
| **Between groups** | 1.257 | 5 | .251 | 4.348 | .001 |
| **Within groups** | 19.256 | 333 | .58 | | |
| **Total** | **20.513** | **338** | | | |

From table 4.30, an analysis of variance showed that there was a statistically significant difference of perceived usefulness of DBS among the various levels of education, F( 5,333) = 4.348, p = .001. The study concluded there was a significance difference in the perceived usefulness of DBS among the various levels of education.

### 4.5.15 Perceived Ease of Use of DBS

The last construct of digital banking service was the perceived ease of use. The mean score of this section was also viewed in respect of the demographic characteristics such as age, gender and highest level of education. This section discusses these aspects among others. The mean scores of perceived eases of use of respondents of each bank were computed and the results were presented in table 4.29

**Table 4.29 Perceived Ease of use of DBS by Bank**

| Bank | n | *M* | *SD* |
|---|---|---|---|
| COOP | 66 | 4.72 | .322 |
| KCB | 94 | 4.76 | .232 |
| Equity | 124 | 4.82 | .234 |

| | | | |
|---|---|---|---|
| Family | 55 | 4.81 | .167 |
| **Total** | **399** | **4.78** | **.246** |

Table 4.29, shows that the customers of Equity Bank had the highest score on perception of ease of use of DBS (M = 4.82, SD = .234), followed by those from Family bank (M= 4.81, SD = .167), KCB (M = 4.76, SD = .232) and those from Coop bank had the least perception (M= 4.72, SD = .322). This is probably due to the fact the Digital Banking Services system at Equity bank is customer friendly than the rest. An ANOVA of variance was computed on the perceived ease of use by customer of various banks. The results are presented in table 4.30

**Table 4.30 ANOVA for Perceived Ease of use by respondents of various banks**

| **Source** | **Sum of squares** | **df** | **Mean square** | **F** | **Sig.** |
|---|---|---|---|---|---|
| **Between groups** | 1.010 | 3 | .337 | 6.675 | .061 |
| **Within groups** | 16.898 | 333 | .050 | | |
| **Total** | **17.909** | **338** | | | |

It can be observed from table 4.30 , An analysis of variance showed that there was no any statistically significant difference of perceived ease of use among the four banks, F (3,333)= 6.675, P = .061, $\alpha$ = .05. The study therefore concluded that there is no significant difference of perceived ease of use among the costumers of the four banks.

The study also aimed at establishing the influence of perceived usefulness of DBS on adoption of DBS. The values of the perceived usefulness were correlated with those of the

number of times of a customer uses the DBS per month. The results are presented in table 4.31

**Table 4.31 Correlation between the perceived usefulness of DBS and adoption of the service**

| | | Perceived usefulness of DBS | No. of times used the DBS per month |
|---|---|---|---|
| **Perceived usefulness of DBS** | Pearson Correlation | 1 | .450 |
| | Sig. (2-tailed) | | .02 |
| | n | 339 | 339 |
| **No. of times used the DBS per month** | Pearson Correlation | .450 | 1 |
| | Sig. (2-tailed) | .942 | |
| | n | 339 | 339 |

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

Table 4.31 shows that there was positive correlation between perceived usefulness of DBS and adoption of DBS , r (339) = .450, p = .02, α =. 05. This implies that the higher the perceived usefulness the higher adoption of DBS. There is need for the concerned banks to promote the DBS so as to make the customers more awareness of the usefulness of DBS.

### 4.5.16 Perceived Ease of use of DBS by Gender

The study also determined if there was any significant difference by perceived ease of use between genders. An independent t-test was carried out and the results are presented in table 4.32.

**Table 4.32 Independent t-test on perceived ease of use between gender**

| Gender | n | *M* | *SD* | *t* test | | |
|---|---|---|---|---|---|---|
| | | | | T | df | Sig. |
| **Male** | 217 | 4.88 | .534 | .976 | 337 | .330 |
| **Female** | 122 | 4.85 | .401 | | | |

It can be observed from table 4.32 that males had a higher mean score on perceived ease of use (M= 4.88, SD = .534) than the females (M= 4.85, SD =.401). A t test shows that there was no any significant difference between males and females in perception of ease of use of DBS, t (337) = .976, p = .330, α = .05.

### 4.5.17 Perceived Ease of use by Age

The study also established the perceived ease of use by age. The result are tabulated in table 4.33

**Table 4.33 Mean Scores of Perceived Ease of use by Age**

| Age (yrs) | n | *M* | *SD* |
|---|---|---|---|
| **18-27** | 76 | 4.78 | .263 |
| **28-37** | 174 | 4.91 | .211 |
| **38-47** | 58 | 4.91 | .198 |
| **Over 48** | 31 | 4.82 | .243 |
| **Total** | **339** | **4.87** | **.230** |

Table 4.33 shows those aged between 28-37 had the highest mean score of perception of use of use of DBS ( M= 4.92, SD =.211), followed by those aged 38-47 years (M = 4.91, SD =

.198), next those aged over 48 years (M= 4.82,SD = .243 and the bracket with the least perception of the ease of use of DBS is that aged 18-27 years (M = 4.78, SD = .263). An analysis of variance was computed using SPSS program and the results are presented in table 4.34.

**Table 4.34 ANOVA on Perceived Ease of use by Age**

| Source | Sum of squares | df | Mean square | F | Sig. |
|---|---|---|---|---|---|
| **Between groups** | 1.023 | 3 | .341 | 6.767 | .001 |
| **Within groups** | 16.885 | 335 | .050 | | |
| **Total** | **17.909** | **338** | | | |

From table 4.34, an analysis of variance showed there was a significant difference among the four age brackets on their perception of the ease of use of DBS, $F(3, 335) = 6.767$, $p = .001$, $\alpha = .05$. Those aged 28-37 years perceived digital banking services as easy to use. Those aged between 28-37 years had the highest perception of ease of use in DBS, followed by those aged 38-47 years, next those aged over 48years while those aged 18-27years had the least perception.

### 4.5.17 Perceived Ease of Use by Level of Education

The mean score of the perceived ease of use by level of education was carried out to establish if there is any significant difference among them. The results are presented in table 4.35.

**Table 4.35 Perceived Ease of use by Level of Education**

| Highest level of Education | n | *M* | SD |
|---|---|---|---|
| **O level** | 123 | 4.83 | .248 |
| **A-Level** | 19 | 4.84 | .239 |
| **Diploma** | 85 | 4.90 | .229 |
| **Degree** | 89 | 4.90 | .198 |
| **Masters** | 21 | 4.86 | .231 |
| **PhD** | 2 | 5.00 | .000 |
| **Total** | **339** | **4.87** | **.230** |

Table 4.35 shows that the PhD holders perceived DBS as easy to use (M = 5.00, SD = .000), followed by the Degree holders (M= 4.90, SD=.198), next were the Diploma holders (M = 4.90, SD = .229), Master degree holders (M = 4.86, SD = .231), A-Level (M = 4.84, SD = .339) while the O-Levels had the lowest perception of the ease of use of the DBS (M = 4.83, SD = .248).

**Table 4.36 ANOVA for the Perceived Ease of use of DBS by Level of Education.**

| Source | Sum of squares | df | Mean square | F | Sig. |
|---|---|---|---|---|---|
| **Between groups** | .481 | 5 | .096 | 1.837 | .105 |
| **Within groups** | 17.428 | 333 | .052 | | |
| **Total** | **17.909** | **338** | | | |

It can be observed from table 4.36 that the analysis of variance showed that there was no statistically significant difference in the perception of ease of use among the levels of education, F (5, 333) = 1.837, p=.105, α =.05. The study concluded that there was no significant difference in the perception of the ease of use of digital banking services by Level of education.

### 4.5.18 Perceived use of use of DBS by status of employment

Finally, the study determined the perceived ease of use DBS by status of employment. The mean scores of the three groups are presented in table 4.37

**Table 4.37 Perceived Ease of use of DBS by Status of Employment**

| Status of Employment | n | *M* | SD |
|---|---|---|---|
| **Employed** | 131 | 4.79 | .227 |
| **Self-employed** | 164 | 4.79 | .266 |
| **Unemployed** | 44 | 4.74 | .226 |
| **Total** | **339** | **4.78** | **.246** |

Table 4.37 shows that the employed respondents had the highest perception of ease of use of DBS (M = 4.79, SD = .266), followed by self-employed (M = 4.78, SD = .266) while the unemployed had the lowest perception of the ease of use of DBS. The overall mean (M= 4.78, SD = .246) shows a very high perceived ease of use of DBS among the respondents. An analysis of variance on perceived use of use of DBS is presented in table 4.38.

**Table 4.38 ANOVA of Perceived Ease of use DBS and Status of Employment**

| Source | Sum of squares | df | Mean square | F | Sig. |
|---|---|---|---|---|---|
| **Between groups** | .078 | 2 | .039 | .645 | .525 |
| **Within groups** | 20.475 | 336 | .061 | | |
| **Total** | **20.513** | **338** | | | |

From table 4.38, an analysis of variance showed that there was no any statistically significant difference among the them, F(2,336) - .645, p=.525, α= .05.The study concluded that there was no significant difference in the perceived usefulness of digital banking services and status of employment.

The study also aimed at establishing the influence of ease of use of DBS on adoption of DBS. The values of the perceived ease of use were correlated with those of the number of times of a customer uses the DBS per month. The results are presented in table 4.39

**Table 4.39 Correlation between the perceived ease of use of DBS and adoption of the service**

| | | Perceived ease of use of DBS | No. of times used the DBS per month |
|---|---|---|---|
| **Perceived ease use of DBS** | Pearson Correlation | 1 | .64 |
| | Sig. (2-tailed) | | .0241 |
| | n | 339 | 339 |
| **No. of times used the DBS per month** | Pearson Correlation | .64 | 1 |
| | Sig. (2-tailed) | .0241 | |
| | n | 339 | 339 |

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

Table 4.31 shows that there was a strong positive correlation between perceived ease of use of DBS and adoption of DBS , r (339) = .64, p = .0241, α =. 05. This implies that the higher the perceived ease of use the higher adoption of DBS. There is need for the concerned banks to ease the usage of the DBS so as to increase its usage.

### 4.5.19 Relationship between the factors of digital banking services and Adoption of the services

The four constructs of digital banking services were awareness($x_1$), trust($x_2$), perceived usefulness($x_3$) and perceived ease of use ($x_4$) of digital banking services formed the independent variables. The dependent variable was the adoption of the digital services(Y). It was measured by the total number of times the customers used the services. A regression analysis was performed and the results presented in table 4.38

**Table 4.40 Model summary**

| R | R Square | Adjusted R square | Standard Error of estimate |
|---|---|---|---|
| .187 | .35 | .23 | 2.802 |

**ANOVA**

| Source | Sum of squares | Mean square | F | Sig. |
|---|---|---|---|---|
| **Regression** | 95.166 | 23.791 | 3.031 | .018 |
| **Residual** | 2622.115 | 8.851 | | |

| | Unstandardized coefficient | Standardized coefficient | Beta | t | Sig. |
|---|---|---|---|---|---|
| | **B** | **Std Error** | | | |
| **(Constant)** | 9.179 | 4.242 | | 2.164 | .031 |
| **Awareness** | -1.342 | .394 | -.183 | -3.405 | .001 |
| **Trust** | .089 | .173 | .028 | .515 | .607 |
| **Perceived usefulness** | .161 | .621 | .014 | .260 | .795 |
| **Ease of use** | 1.81 | .464 | .021 | .387 | .699 |

Table 4.40 shows that the R square, $R^2$ = .23. This shows that the four factors account for 23% of the total variation of adoption of digital services. From table 4.40, the following regression equation was obtained: $Y = 9.179 + -.183x_1 + 0.028x2 + 0.014x3 + .0215x4$. The absolute t-values obtained shows that the awareness variable (t=3.405 at α=.001) significantly contributes to adoption of digital services. The constant also contributed significantly (t=2.164 at α=.031) to the adoption of digital services. This could include factors such as culture and personality traits of the individual customer.

# CHAPTER FIVE

# SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

## 5.1. Introduction

The chapter presents the study finding, draws conclusions and makes policy recommendations.

## 5.2. Summary of findings

The study found out that majority of the respondents 205 (60.5%) preferred mobile banking, followed by agency banking 99 (29.2%) while the least 36(10.6%) preferred digital services.

The study was guided by the following four objectives. The first objective was to establish the extent to which Customer awareness influence adoption of digital banking in commercial banks of Thika Sub-County. The study found out there was a strong positive correlation between awareness of DBS and adoption of DBS , r (339) = .584, p = .001, α =. 05. Other findings concerning awareness of DBS and adoption of the service were as follows. That the majority of the respondents agreed to have received enough information about digital banking service (M = 4.33). The respondents from the family bank mostly agreed (M = 4.51) to have received enough information about the benefits of digital banking services. Males were found to have a higher mean awareness score of DBS (M = 4.38) than the females (M = 4.32). However, there was no any statistically significant differences in awareness of digital banking services between males and females, t (2, 336) = 1.383, p=.168, α =.05. The study also found out that the customers aged 28-37yrs had a higher awareness of DBS (M = 4.61), followed by those aged 38-47 years, next were those aged over 48 years while those aged 18-

27 years were least aware. An analysis of variance found out there was a significant difference in perceived awareness of digital banking services among the various age brackets, F (3,335) = 5, 9.934, p = .001, α =.05. The respondents aged 28-37 years were more aware about digital banking services than the rest. The study also found out the PhD holders had the highest awareness score on digital banking services (M = 4.53), followed by Master degree holders (M = 4.52), degree holders (M = 4.52) while the Diploma, A-level and O-level graduates had the same score on perception of awareness of digital banking services (M = 4.33). An Analysis of variance shows that there was no any statistically significant difference among the various levels of education, F (5,338) = 1.782, p= .116, α = .05). The employed had the highest awareness score on digital banking service (M = 4.37), followed by the self-employed (M =4.36) and the least aware were the unemployed (M = 4.32). An analysis of Variance (ANOVA) showed that there was no any statistically significant difference among the groups, F (2,336) = .344, p = .709, α = .05.

The second objective was to examine how customer trust influences adoption of digital banking in commercial banks of Thika Sub-County. To this end, the study found out that there a very weak correlation between trust of DBS and adoption of DBS , r (339) = .063, p = .025, α =. 05. Other findings about perceived trust of DBS were as follows. That the total perceived trust in DBS was low (M = 2.65, SD = .833) among the respondents. It also established that the customers of Equity bank had the highest trust on DBS (M = 2.95, SD=9.38), followed by those of COOP bank (M=2.73, SD=.724), next were KCB customers and those with the least trust were those of Family bank (M =2.28, SD= .901). An analysis of variance showed that there was a statistically significance difference in trust of DBS among the four banks, F (3, 335) = 10.998, p <.0005, α= .05. Females had a higher trust in DBS (M

= 2.68, SD= .929) than the males (M = 2.64, SD= .858). However, an independent t-test showed that there no any statistically significant difference between the gender, absolute t (337) = 0.333, p = .739, α = .05. The customers aged 28-37yrs had a highest trust in DBS (M = 2.77, SD = .883), followed by 58 customers aged 38-47 (M = 2.68, SD = .964), next were the 31 customers aged over 48 years and those with least trust on DBS were 76 (M = 2.42. SD = .792). An analysis of variance (ANOVA) showed that was there was a statistically significant difference in trust in DBS among different age brackets, F (3, 335) = 3.033, p = .029. α =.05. The A-Level holders had the highest scores on trust in DBS (M =3.05, SD =.752), followed by PhD holders (M = 3.00, SD=.000), Diploma holders (M = 2.98, SD = .954), Degree holder (M= 2.57, SD = .922), O-Level graduates (M = 2.5, SD = .752) and those with the least trust in DBS were the Masters Degree holders (M= 2.19, SD = .844. The unemployed had the highest level of trust in DBS (M = 2.70, SD = .885), followed by the employed (M = 2.66, SD = .866) while self-employed had the least trust in DBS (M= 2.64, SD = .901). An analysis variance shows that there was no any statistically significant difference in the perceived trust in DBS with the status of employment, F (2,336) = .92, p = .912.

The third objective was to determine the extent to which perceived usefulness influences digital banking adoption in in commercial banks of Thika Sub-County. The study found out that there was a positive correlation between perceived usefulness of DBS and adoption of DBS, r (339) = .450, p = .02, α =. 05. Other minor findings were as follows. The perceived usefulness of DBS was high (M = 4.78, SD = .246). Equity bank customers had the highest score in perceived usefulness of DBS (M = 4.82, SD = .234), followed by Family bank (M = 4.81, SD =.167) KCB (M= 4.76, SD = .232) and the customers of Coop bank had the lowest

perception of the usefulness of DBS (M= 4.72, SD = .322). Males had a higher mean score on perception of usefulness of DBS (M = 4.80, SD = .236) that the females (M = 4.74, SD = .260). A test shows there was a statistically significant difference between the gender, t (337) = 2.172, P = .031, α = .05. The male had a higher perception towards usefulness of DBS than females. The 28-37 years bracket had the highest perception of usefulness of DBS (M= 4.72, SD= .249), followed by those aged 18-27 years (M = 4.72, SD = .269), 38-47 years (M = 4.70, SD = .200) and the over 48years had the lowest perception (M = 4.61, SD = .148). An analysis of variance showed that there was a significant difference in the perception of usefulness of DBS by age, F (3,335) = 8.133, p < .0005, α = .05. The PhD holders had the highest perception of the usefulness of DBS (M = 5.00, SD = .001), followed by Master degree holders (M= 4.87, SD = .166), next were the diploma holders (M = 4.84, SD = .203), O level graduates (M= 4.78, SD = .255), degree holders (M= 4.74, SD = .210) and those with least perception were the A-level holders (M= 4.61, SD = .434). An analysis of variance showed that there was a statistically significant difference among the various levels of education, F( 5,333) = 4.348, p = .001

The last objective was to establish the extent to which perceived ease of use of technology influences adoption of digital banking in commercial banks of Thika Sub-County. The study found out that there was a positive correlation between perceived ease of use of DBS and adoption of DBS , r (339) = .64, p = .0241, α =. 05. It was found out that males had a higher mean score on perceived ease of use (M= 4.88) than the females (M= 4.85). A t test shows that there was no any significant difference between males and females in perception of ease of use of DBS, t (337) = .976, p = .330, α = .05. Those aged between 28-37 had the highest mean score of perception of use of use of DBS ( M= 4.92, SD =.211), followed by those aged

38-47 (M= 4.91, SD = .198), next those aged over 48 years (M= 4.82, SD = .243 and the bracket with the least perception of the ease of use of DBS is that aged 18-27 years (M = 4.78, SD = .263). An analysis of variance showed there was a significant difference among the four age brackets on their perception of the ease of use of DBS, $F(3, 335) = 6.767$, $p = .001$, $\alpha = .05$. Those aged 28-37 years perceived digital banking services as easy to use. The PhD holders perceived digital banking services as easy to use (M = 5.00, SD = .000), followed by the Degree holders (M= 4.90, SD=.198), next were the Diploma holders (M = 4.90, SD = .229), Master degree holders (M = 4.86, SD = .231), A-Level (M = 4.84, SD = .339) while the O-Levels had the lowest perception of the ease of use of the DBS (M = 4.83, SD = .248). An analysis of variance showed that there was no statistically significant difference in the perception of ease of use among the levels of education, $F(5, 333) = 1.837$, $p=.105$, $\alpha =.05$. The employed respondents had the highest mean score on perception of ease of use of DBS (M = 4.79, SD = .266), followed by self-employed (M = 4.78, SD = .266) while the unemployed had the lowest perception of the ease of use of DBS. An analysis of variance showed that there was no any statistically significant difference between them, F (2,336) - .645, p=.525, $\alpha$= .05.

Finally, derived a model for the adoption of the DBS (Y) was: $Y = 9.179 + -.183x_1 + 0.028x_2 + 0.014x_3 + .0215x_4$ where $x_1$ = awareness, $x_2$ = trust, $x_3$ = perceived usefulness, $x_4$ = perceived ease of use. The four factors were found to account for 23% of the total variation of adoption of digital services. Awareness was found to contribute significantly to the adoption of DBS.

## 5.3 Conclusions

From the findings, the study made a number of conclusions. The study concluded that mobile banking is the most preferred DBS, followed by agency banking while internet banking was third.

In line with the objectives, four major conclusions were made. First, the study concluded that there was awareness of DBS positively influenced that adoption of DBS. Secondly, the lack of trust in DBS negatively influenced the adoption of DBS. Third, the perceived usefulness of DBS positively influenced the adoption of DBS. Finally, the ease of use of DBS also positively influenced the adoption of DBS.

The study also concluded that awareness, trust, perceived usefulness and use of digital banking significantly contributed to the total variation of adoption of digital services. Awareness statistically contributed significantly to the adoption of DBS.

Other minor conclusions were that males were equally aware of DBS as females though males were more informed. The customers aged 28-37yrs were most aware of DBS, trust the DBS most, perceived the service as most useful and perceived as very easy to use.

The study also concluded that the total perceived trust in DBS by customers was low.

## 5.4 Recommendations

Following the above conclusions, the study makes the following recommendations to the commercial banks.

1. There is need to setup awareness and security of agency banking and internet banking to increase their usability.

2. Design promotional campaigns targeting female customers to increase awareness, build trust, explain the benefits of using DBS and reduce the anxiety of ease of use of the DBS.

3. Carry out promotional activities that target the 18-27 age brackets so as to increase awareness, build trust, explain benefits of DBS as well as reduce the anxiety of ease of use of the DBS.

4. They should beef up security of their systems so as to increase trust in DBS among their customer thereby increasing usage and eventually profitability.

5. They also design promotional strategies incorporate the unemployed so as to increase awareness, build trust, explain benefits of DBS as well as reduce the anxiety of ease of use of the DBS.

6. They can use the model for the for the adoption of the DBS to predict the adoption of DBS

**5.5. Suggestions for Further Research**

The study recommends further studies to:

1. To establish other factors that influence the adoption of DBS

2. To establish the influence of personality and culture on the adoption of DBS

3. Strategies of building trust on DBS

4. Investigate the low uptake of Internet Banking

5. investigate the effectiveness of the proposed digital banking services model

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## APPENDICES

## APPENDIX 1: LETTER OF TRANSMITTAL

Julius Okoth Juma

P.O Box 31834-00600

Nairobi, Kenya.

**To Whom it May Concern**

Dear Sir/ Madam,

Re: An investigation into the factors that influence the adoption of digital banking services by customers in Kenya

I am a postgraduate student pursuing a Master of Arts degree in Project Planning and Management at the School of Distance Education of the University of Nairobi.

I am conducting a research to explore the factors influencing the adoption of digital banking services in Kenya and would wish to request you to participate in a questionnaire survey that will take about 5 minutes. There is no right or wrong answer and the data will be used only for the purpose of writing an academic paper.

Your participation in this study is voluntary. You can choose not to participate or to withdraw from the study at any time. The results of the research study may be published, but your name will not be used.

Your contribution is important and can make a difference!

Thank you for your cooperation!

Yours faithfully,

Julius Okoth Juma

L50/72007/2011

## APPENDIX 2: CUSTOMER QUESTIONNAIRE

Factors influencing the adoption of digital banking services in Kenya. For the purpose of this study, digital banking is limited to internet, mobile and agency banking

Please respond to questions below by ticking your choice.

**a) Demographic Characteristics**

1. Gender □ Male □ Female

2. Age □ 18 – 27 □ 28 – 37 □ 38 – 47 □ Over 48

3. Highest Education

   □ O level □ A level □ Diploma

   □ Degree □ Master □ PHD

4. Current Profession

   □ Student □ Employed □ Self employed

   □ Unemployed □ Retiree □ Housewife

**b) Digital Banking Services**

The following are statements about digital banking services, kindly tick in the appropriate box your perception about it.

**Key SA: - Strongly agree, A:- Agree, N: - Neutral, DA: - Disagree, SDA: - Strongly Disagree**

| No | STATEMENT | SA | A | N | DA | SDA |
|---|---|---|---|---|---|---|
| | **Awareness** | | | | | |
| 1 | I have generally received enough information about digital banking services | | | | | |
| 2 | I have received enough information about the benefits of using digital bank services | | | | | |
| | **Trust:** | | | | | |
| 1. | I fully trust the banks and banks agents offering digital banking services | | | | | |
| 2. | I fully trust the technology (internet, mobile phone and point of sale readers) used to deliver digital banking services | | | | | |
| | **Perceived Usefulness:** | | | | | |
| 1. | I think that digital banking services would enable me to save time | | | | | |
| 2. | I think that digital banking services would make it easier for me to carry out my financial | | | | | |
| 3. | I think that digital banking services are useful | | | | | |
| | **Perceived ease of use:** | | | | | |
| 1. | I think that interaction with digital banking services does not require a lot of effort. | | | | | |
| 2. | I think that digital banking is easy to use. | | | | | |

c)

1. a) Do you perceive digital banking to be a safe way of transacting?

   b) If no, what risks do you think are associated with digital banking?

2. In your opinion, what can be done to ensure that the services offered can safe guard the finances of customers?

3. a) Are the services provided user friendly to the customers?

   b) If no, what are the constraints you face while accessing the services?

4. What can be done to ease the use of these services to promote usage?

## APPENDIX 3: TABLE FOR DETERMINING SAMPLE SIZE FOR A GIVEN POPULATION

| N | S | N | S | N | S | N | S | N | S |
|---|---|---|---|---|---|---|---|---|---|
| 10 | 10 | 100 | 80 | 280 | 162 | 800 | 260 | 2800 | 338 |
| 15 | 14 | 110 | 86 | 290 | 165 | 850 | 265 | 3000 | 341 |
| 20 | 19 | 120 | 92 | 300 | 169 | 900 | 269 | 3500 | 346 |
| 25 | 24 | 130 | 97 | 320 | 175 | 950 | 274 | 4000 | 351 |
| 30 | 28 | 140 | 103 | 340 | 181 | 1000 | 278 | 4500 | 354 |
| 35 | 32 | 150 | 108 | 360 | 186 | 1100 | 285 | 5000 | 357 |
| 40 | 36 | 160 | 113 | 380 | 191 | 1200 | 291 | 6000 | 361 |
| 45 | 40 | 170 | 118 | 400 | 196 | 1300 | 297 | 7000 | 364 |
| 50 | 44 | 180 | 123 | 420 | 201 | 1400 | 302 | 8000 | 367 |
| 55 | 48 | 190 | 127 | 440 | 205 | 1500 | 306 | 9000 | 368 |
| 60 | 52 | 200 | 132 | 460 | 210 | 1600 | 310 | 10000 | 373 |
| 65 | 56 | 210 | 136 | 480 | 214 | 1700 | 313 | 15000 | 375 |
| 70 | 59 | 220 | 140 | 500 | 217 | 1800 | 317 | 20000 | 377 |
| 75 | 63 | 230 | 144 | 550 | 225 | 1900 | 320 | 30000 | 379 |
| 80 | 66 | 240 | 148 | 600 | 234 | 2000 | 322 | 40000 | 380 |
| 85 | 70 | 250 | 152 | 650 | 242 | 2200 | 327 | 50000 | 381 |
| 90 | 73 | 260 | 155 | 700 | 248 | 2400 | 331 | 75000 | 382 |
| 95 | 76 | 270 | 159 | 750 | 256 | 2600 | 335 | 1000000 | 384 |

“N” is population size “S” is sample size

Krejcie, R.V. & Morgan, D.W. (1970). Determining Sample Size for Research Activities, Educational and Psychological Measurement

NACOSTI

# NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

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NAIROBI-KENYA

Ref: No. **NACOSTI/P/13/8871/368**

Date:

**27th November, 2013**

Julius Okoth Juma
University of Nairobi
P.O.Box 30197-00100
**NAIROBI.**

**RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on ***"Factors influencing adoption of digital banking services by customers in Kenya: A case of Commercial Banks in Thika Sub County - Kenya,"*** I am pleased to inform you that you have been authorized to undertake research in **Kiambu County** for a period ending **24th December, 2013.**

You are advised to report to **the Chief Executive Officers of the selected Commercial Banks** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

**SAID HUSSEIN**
**FOR: SECRETARY/CEO**
**NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION**

Copy to:

The Chief Executive Officers
Selected Commercial Banks.

**THIS IS TO CERTIFY THAT:**
***MR. JULIUS OKOTH JUMA***
**of UNIVERSITY OF NAIROBI, 31834--600 NAIROBI,has been permitted to conduct research in *Kiambu County***
**on the topic: *FACTORS INFLUENCING ADOPTION OF DIGITAL BANKING SERVICES BY CUSTOMERS IN KENYA: A CASE OF COMMERCIAL BANKS IN THIKA SUB COUNTY- KENYA***
**for the period ending:**
***24th December,2013***

**Permit No : NACOSTI/P/13/8871/368**
**Date Of Issue : 27th November,2013**
**Fee Recieved : Kshs khs1000.00**

.....
***Applicant's Signature***

.....
***Secretary***
***National Commission for Science, Technology & Innovation***

**CONDITIONS**

1. **You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit**
2. **Government Officers will not be interviewed without prior appointment.**
3. **No questionnaire will be used unless it has been approved.**
4. **Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.**
5. **You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.**
6. **The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice**

**REPUBLIC OF KENYA**

NACOSTI

**National Commission for Science, Technology and Innovation**

**RESEARCH CLEARANCE PERMIT**

**Serial No. A** 724

**CONDITIONS: see back page**