

**FACTORS INFLUENCING CUSTOMERS UTILIZATION
OF AUTOMATED PROCESSES IN COMMERCIAL BANKS
IN KENYA: A CASE OF EQUITY BANK**

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DECLARATION

This research project report is my original work and has never been submitted for an award of a degree in any other university.

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DEDICATION

This research project report is dedicated to the Wambugu's family for their moral and financial support. Also I would like to dedicate Stephen, Olive and Aria for their support in a big way.

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ABBREVIATIONS AND ACRONYMS

EDP-	Electronic Data Processing systems
FMS-	Flight Management System
IB-	Internet Banking
IBM-	International Business Machines
IS-	Information Systems
IT-	Information Technology
MICR-	Magnetic Ink Character Recognition
MIS-	Management Information Systems
SET-	Self-Efficacy Theory
TAM-	Technology Acceptance Model
TPB-	Theory of Planned Behaviour
TRA-	Theory of Reasoned Action

ABSTRACT

The essential role of technology has long been proven in the history of consumer banking, not merely as a facilitator for procedures and improving performance, but also as a deciding factor determining the shape of the industry. While the use of new technology has hence been proven to provide extensive potential for enhancing outreach in Africa, it is not going to be sufficient if most of the populace does not embrace the technologies being offered. The objective of this particular research was to examine the factors influencing customers' utilization of automated processes in commercial banks in Kenya. The outcomes of this research may be critical in formulating a number of guidelines and educational campaigns that will boost the actual uptake of automated banking solutions. In order to achieve its objectives, the research tends to make use of the Technology Acceptance Model in order to examine the actual impact and effect of Perceived Ease of Use, Perceived Usefulness, Trust and Risk on the Utilization of Automation Systems. The research applied the descriptive survey design which provided qualitative and quantitative data suitable for analyzing the factors influencing customers' utilization of automated processes in the Kikuyu Branch of Equity Bank, where the total population of the active account holders is 75,000. The Krejcie & Morgan table was basically put to use to figure out the sample size with regard to the research, providing a sample size of 382. The sample was basically drawn by way of simple random sampling involving the clients visiting the banking hall. The research adopted a questionnaire as the tool for data collection. To establish content validity regarding the tool, a pilot study ended up being done. In this particular study, test and re-test method was basically used during piloting. Qualitative data was analysed by way of organizing responses in themes as per the objectives of the research. Quantitative data ended up being analysed by way of descriptive statistics making use of the statistical package for social sciences (SPSS). The research discovered that participants who had the notion that internet banking seemed to be easy to use were definitely more probable to embrace this kind of banking automated system. Also, increased perceptions that automated systems were useful led to increased adoption rates. Increased trust levels in the capabilities of automated banking boosted consumer uptake of these banking services. In addition, lower perceived risk was seen to bolster the adoption of automated banking services. To make customers perceive automated banking as being easy to use – a factor that has been proven in this study to be of very significant impact on internet banking adoption – it is recommended that banking institutions need to design customer-centric apps with easy to understand interfaces and follow up with extensive customer education and technical support. Moreover, the functionality of the apps needs to be extensive and the banks need to not only rely on user feedback about the functions that need to be baked in at the design stage, but also innovate new ways to serve the customer so as to encourage increased adoption. All this needs to be done without compromising the reliability of the apps since eroded trust is clearly seen to deter customer adoption of automated services. Seeing that the risk to the customers also has a profound effect in the participation of the utilization of automated processes, it is important for the stakeholders and the government to formulate laws and policies that mitigate these risks.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Automation is considered the completion by a machine intermedium (typically a computer) of a functionality which was erstwhile completed by a human. What is regarded as automation can consequently transform as time passes. Once the reallocation of functionality from human being to machine is finished and irreversible, then the functionality will end up being seen just as a machine operation, and not as automation. Instances of this include things like; starter motors for vehicles and automated lifts. Equally, such tools such as automated teller machines, cruise control in automobiles, as well as the flight management system (FMS) in aeroplanes are considered as automation since they carry out functions which are likewise carried out manually by human beings. Modern-day automation can well be future machines. Automation of physical operations has liberated humans from numerous labour intensive and time consuming routines; nonetheless, complete automation of intellectual capabilities like making decisions, planning, as well as creative thinking continues to be uncommon (Parasuraman& Riley, 1997).

The fundamental purpose of technology has been demonstrated in the historiographical past of consumer banking, not just as a facilitator for processes and improving performance, but similarly as a determining element characterizing the shape of the sector (Samakovitis, 2012). The very first applications of communication systems in banking are recorded since 1846 in America, by use of telegraph messaging. In spite of the development of these forms of uses from New York to The UK, with the build-up of transatlantic cabling over a hundred years ago, this innovation had little impact on how commercial banking was carried out in Great Britain (Batiz-Lazo& Wood, 2002; Samakovitis, 2012).

The historic past of banking systems mainly mirrored that of the robotisation of financial firms. This was because no other class of technology had produced an apparent impact in the industry, perhaps because of the service attributes affiliated with banking that counted

on accuracy, constancy, reliability and intricacy - abilities which computer machinery was brought in many facets to compliment. Making use of accounting machines, as they turned out to be known in the beginning of the 20th century, signalled the start of the automation of banking. The move from standalone devices to automated systems was pushed throughout the 1950s and 1960s with developments in digital technology, such as the commercial launch of the computer system by IBM back in 1948 (Campbell-Kelly, 1989) and also the production of Magnetic ink character recognition (MICR). As a result, the speed of transaction processing offered by digital devices resulted in the achievement of this mass-market expansion. One of many substantial banking-related computing innovations was batch processing; which is the sequential interpretation of data associated with distinctive automated routines. This triggered the quick synchronous control of transactions, standing orders along with other internal clerical responsibilities to achieve scale economies (Fincham et al., 1994).

The interval around 1965 and 1969 saw the launch of EDP (Electronic Data Processing systems) and DBMS (Database Management Systems) in UK banks, enhancing the innovation capability of banks. Substantial levels of expansion of DBMS applications almost coincided with the development of another essential banking innovation: Automated Teller Machines (ATMs). Subsequent advancements in MICR innovation and the release of the very first bank card in the United Kingdom by Barclays in the year 1966, ATMs had been initially revealed in the UK market through the same financial institution 2 years later, mainly to take advantage of the intense demand for money withdrawals through credit card accounts. Despite the fact that they had been associated with hefty investment and intensely challenging infrastructure and maintenance requirements, ATMs ended up being a 'killer' application. The commercial validation for them was mainly touted based on labour savings as well as the cost savings from not needing to obtain property for branch extension for cashier roles (Samakovitis, 2012; Ackrill& Hannah, 2001).

The introduction of network technologies which separated ATMs from bank branches had substantial impact, not just in the spread of this kind of equipment but additionally to

the switch in focus of banks' assets from obtaining new branches (an essential investment to broaden their ATM network) to accomplishing technology efficiency. The time through the late 1960s through to the 1980s has been identified as one of substantial implantation of software and hardware technologies in consumer banking, with banking institutions rising as important consumers of the computing sector with ATMs as well as EDI (Electronic Data Interchange) devices prevailing in bank data handling (Fincham et al., 1994). Advancements like the growth of Euromarkets - mainly influenced by new technical abilities and with the complicity of some other socio-economic elements - brought London to the middle of global banking and transformed the recruitment habits of the industry (Morris, 1986).

Total automation of branch procedures as well as the associated shift of technical emphasis from processing to communications along with MIS (Management Information Systems) became many of the crucial events of this time. The freshly established culture of DBMS and EDP has progressively resulted in the inception of networking as the major technological trait of banking, with information technology permeating the client-bank interface. Strategic goals have been dedicated to efficient service provision instead of broadening the client base, or even developing client value (Samakovitis, 2012).

In the African continent at present, banking institutions have progressively seen the necessity to test out modern technologies. Specifically, banking institutions have begun to make smarter use of soft data and relationship credit, which had been quite overlooked in the modernization of automation of contemporary banking in the African continent (Honohan, 2008). In Kenya, there is a heightened emphasis of mobile automation by banking institutions wanting to replicate the accomplishments of mobile money transfer, particularly after the distinctive achievements of M-Pesa, which had approximately 1 million documented clients at the end of its first 12 months (Gikunda, Abura & Njeru, 2014). Mobile banking as a kind of banking automation has the prospective to be life changing, but if only appropriated by a significant portion of the unbanked populace (Morawczynski & Miscione, 2008).

1.2 Statement of the problem

Under 20 percent of Africans enjoy admission to a formal or even semi-formal financial agent. This amazing truth is afresh mostly a delineation of the little pay levels and also foundation inadequacies all through the locale. Prompt access to managing an account administrations is particularly testing in vast territories of Africa, especially where human populace is close to nothing, profit are lessened, and foundation is poor. There are a few things which should be possible through the present innovation, both physical and also money related. Mobile phones and the web happen to dispose of disconnection and costly teller benefits in numerous areas of Africa. Despite the fact that the utilization of late advancements has in this manner been demonstrated to give noteworthy possibility of improving effort in the African mainland, it is a long way from being sufficient if the vast majority of the general population don't grasp the advances accessible (Honohan, 2008).

Despite the fact that mobile banking has found remarkable successes throughout Kenya, this innovative type of banking is not without its restrictions. As an example, the M-Pesa service has a restricted daily transaction volume and is likely to have high transaction fees when compared with traditional bank accounts. Given that alternate options to M-Pesa are progressively been provided by conventional establishments without having M-Pesa restrictions, it would therefore be of great help to make sure that they turn to be similarly prosperous so that these rewards are dissipated to the large unbanked populace. In the year 2008, there were 8 million customers of mobile banking as compared with 4 million individuals who kept accounts in traditional banking institutions (CBK, 2008). The most up-to-date information show around 36 million customers of mobile transaction solutions. Existing data also demonstrates that 75.3% of Kenyans are now officially integrated; a 50% upsurge in the last Decade. Financial exclusion without a doubt has more than halved since the year 2006, but it nonetheless stands at a confounding 17.4% (CBK 2016). To enhance these numbers, it is essential that the factors that influence the customers' utilization of automated processes in commercial banks in Kenya are established.

1.3 Purpose of the study

The purpose of this study was to explore the factors influencing customers' utilization of automated processes in commercial banks in Kenya by doing a study of Equity Bank.

1.4 Objectives of the study

The study focused on the following objectives:

1. To determine how perceived ease of use influences customers' utilization of automated processes in commercial banks in Kenya.
2. To determine how perceived usefulness influences customers' utilization of automated processes in commercial banks in Kenya.
3. To evaluate how trust in an automated system influences customers' utilization of automated processes in commercial banks in Kenya.
4. To establish how risk influences customers' utilization of automated processes in commercial banks in Kenya.

1.5 Research Questions

The study was guided by these research questions:

1. How does perceived ease of use influence customers' utilization of automated processes in commercial banks in Kenya?
2. How does perceived usefulness influence customers' utilization of automated processes in commercial banks in Kenya?
3. How does trust in an automated system influence customers' utilization of automated processes in commercial banks in Kenya?
4. How does risk influence customers' utilization of automated processes in commercial banks in Kenya?

1.6 Justification of the study

Banking automation is a highly effective tool to attain fair growth in the promotion of financial empowerment for marginalized people by raising formal financial solutions accessibility and usage. The deliverance of such services using cell phones has demonstrated great promise in defeating demographic, institutional, and geographic

limitations to financial inclusion, particularly in the African continent and led by the mobile banking breakthrough in Kenya (Rosengard, 2016). Besides, there currently exists limited research on the factors influencing customers' utilization of automated processes in commercial banks in Kenya.

1.7 Significance of the study

The after effects of this examination might be instrumental in defining different policies and educational crusades to advance the take-up of automated banking services. Different partners, including the Ministry of Finance, The Kenya Bankers' Association, and different Non-Governmental foundations, will profit by the consequences of this examination. It was normal that the examination will show factors influencing customers' utilization of automated processes in commercial banks in Kenya. Such information will be very important to the designers of the internet banking user interface to allow them to optimize for the best user experience. Moreover, banks will gain knowledge on the best ways to promote their automated offerings by offering pertinent user education and support. Additionally, government agencies can capitalize on the results of this study to formulate policies and lay down the legal framework needed to foster the safe proliferation of these banking options. The study is therefore a worthwhile undertaking.

1.8 Assumptions of the study

The study presumed that the participants were representative of the population, were inclined to take part in the study, and would respond to questions truthfully or take part without biasing the study outcomes. The study also assumed that the participants knew about the presence of various automated banking systems and hence they could offer clear leads for the researcher in the study.

1.9 Limitations of the Study

This study focused on the customers of the Equity bank who bank at the Kikuyu Branch. The branch is in very close proximity to the city of Nairobi, and thus the customers had above-average access to automated systems as well as information about the systems compared to other customers in other areas. The results were thus not applicable for generalization to customers of the same institution in other regions or other institutions,

or the general population whose background might be different from those studied. The study involved the usage of questionnaires in gathering data. It is possible that responses relied on the feelings of the respondents who may not have provided truthful answers. It was also hard to control the respondent's attitude as they reply to questions in the questionnaire. However, the researcher overcame this by guaranteeing the respondents of the confidentiality of their identity.

1.10 Delimitations of the Study

The focus of the study on active customers of the Kikuyu Branch of Equity Bank was suitable, since the population was likely to have participants who are easily available for involvement in the study (particularly taking into consideration the short span of time available to finish the study and the budget limitations) and who had open access to information and automated banking services, the institution being one of the largest banks in Kenya. Further, the study focused mainly on customers of the Kikuyu Branch of Equity Bank. The study therefore did not incorporate customers from other branches that constitute the Equity Bank.

1.11 Definitions of key terms

The following terms were defined in the context of the study as:

Automated Process: is general technology phrase which is used to specify any operation being automated with the use of computers and software applications. Operations which have been automated need less human involvement and less human time to produce.

Automation: is the completion by a machine agent (typically some type of computer) of a functionality which was formerly completed by a human.

Banking: transacting business with a financial institution; making a deposit or pulling out funds or asking for financing etc.

Internet Banking: is an approach to banking through which transactions are carried out digitally over the Internet.

Mobile banking: appertains to the utilization of a mobile phone or some other cellular gadget to execute internet banking functions while removed from your home

personal computer, like checking account balances, moving funds between accounts, bill payment as well as locating an ATM.

Perceived Ease of Use: Alludes to the dimension to which an individual feels that utilizing a specific framework would be without exertion.

Perceived Usefulness: is how much an individual feels that utilizing an explicit strategy or method may help work effectiveness or routine obligation.

Risk: is a likelihood or threat of injury, damage, legal responsibility, loss, or any other unfavourable occurrence which is brought on by external or internal vulnerabilities, which may be averted via pre-emptive actions.

Trust: can be explained as the attitude that a mediator will help accomplish an individual's objectives in a scenario characterized by doubt and vulnerability.

1.12 Organisation of the study

The study was organized into five chapters. Chapter one, which is the introductory part, contains the background of the study, the statement of the problem, purpose of the study, objectives of the study as well as the research questions. Also included are the significance, justification, scope, limitation, delimitation of the study, definition of key significant terms and organization of the study. In chapter two, literature review is given. Chapter three encompasses the research methodology under which, research design, target population, sampling procedure and sample size selection, research instrument in data collection, validity and reliability of the instrument, data collection procedures and data analysis techniques are discussed. Data collection was analysed and presented in chapter four. The findings of the study and recommendations made were discussed in chapter five.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviewed various studies from around the world, Africa and in Kenya that have explored the relationship between the factors influencing the customers utilization of automated processes in commercial banks in Kenya. The chapter comprises of introduction, relationship between the variables, research gaps theoretical framework, conceptual framework, summary and research gaps of the literature reviewed.

2.2 Customer Utilization of Automated Processes in Commercial Banks

Mobile banking (m-banking) is one of the newest in a number of current mobile technological marvels. Even though automated teller machine (ATM), phone, and Internet banking provide efficient delivery avenues for conventional banking solutions, but as the most recent delivery conduit founded by retail as well as microfinance banking institutions in numerous developed and developing nations, m-banking is likely to come with substantial benefits to the sector (Safeena, Date, Kammani & Hundewale, 2012). Particularly, the extended uses of mobile phones has enhanced need m-banking solutions, compelling many more banking institutions, microfinance establishments, software firms, and service providers to provide this revolutionary service along with new models of products and programs meant to expand their customer reach (including to unbanked masses), enhance customer retention, improve functional productivity, boost market share, and offer new job opportunities (Shaikh & Karjaluo, 2015; Shaikh, 2013).

Even with such advantages, using cell phones or tablets to perform banking operations or gain access to financial information is not as prevalent as may be anticipated (Dineshwar & Steven, 2013), as exhibited by prominent press reports (Accenture, 2013). In excess of 1 billion consumers are anticipated to use m-banking around the globe by 2017, but that level signifies only 15% of the international cellular subscription base -- a base which accounts for about 96% of the world's populace. Additionally, roughly 50 % of all cellular subscribers continue to be unbanked, with minimal admission to conventional financial services. These tendencies suggest that substantial growth prospects remain,

resulting in predictions of probably enormous increases in the volume of m-banking users (Shaikh & Karjaluoto, 2015).

M-banking goes back to the end of the 1990s when a German organization Paybox, in cooperation with Deutsche Bank, introduced the first service. At first, it was implemented and tried mainly in Europe: Germany, Spain, Sweden, Austria, as well as the United Kingdom. Amongst developing nations, Kenya was the first to create a text based m-banking solution, M-Pesa, in the year 2007. By the year 2012, there were in excess of 7 million documented M-Pesa customers in Kenya. The primary impetus for the speedy endorsement of small cellular devices is the capacity they provide for receiving services and managing applications anytime and anywhere, including when on the go (Shaikh & Karjaluoto, 2015).

Retail and microfinance banks situated in both developed as well as developing nations usually provide 4 points of entry to m-banking services: mobile programs which can be downloadable to a smart phone; mobile web browsers which you can use with any mobile phone or smart phone which has a Browser; programs which can be downloadable to a tablet computer; and short messaging services (SMS) which offer notifications of account data. The first 3 channels call for an Internet link on the mobile gadget; SMS depends on standard Global System for Mobile Communication (GSM) networks. On the whole, m-banking has transformed the financial landscape, and transportable gadgets are now regarded as alternative delivery avenues which use various programs to provide financial and nonfinancial products and services to customers (Shaikh & Karjaluoto, 2015).

The adoption of technologies may be explained in a variety of ways. Some researches take a process methodology and analyse in-depth procedures; others give attention to the associations between technology adoption and controlling parameters, as exemplified by the Technology Acceptance Model (TAM). The TAM is preferred as a platform for analysing intentions to embrace m-banking. This concept asserts that perceived usefulness and ease of use are generally requisite determinants of system embracement and utilization; nevertheless, since the TAM excludes economic as well as demographic elements and external factors, it ostensibly has restricted use for outlining users'

behaviour and behavioural intentions when it comes to mobile service adoptions. For that reason, numerous m-banking usage scientific studies expand or supplement the initial TAM by integrating supplemental constructs, like relative benefits and personal innovativeness, observed risk, observed cost of use, match with way of life and requirements, and perceived security. In addition, the standard TAM leaves out any trust-centered constructs associated with e- or m-commerce, and presume there are no obstacles stopping a user from embracing an information system if they choose to do this (Shaikh & Karjaluoto, 2015).

2.3 The Extended Technology Acceptance Model

Technology Acceptance Model (TAM) indicates that users' motivation may be in 3 elements: perceived ease of use, perceived usefulness as well as attitude towards making use of the system. The theory suggests that the preparedness of a person to make use of or not to utilize a newer technology or information system depends upon their frame of mind, and this frame of mind is swayed by 2 philosophies which are perceived usefulness as well as perceived ease of use. This version is the most popular and commonly acknowledged model among researchers because of its effectiveness. Although the model has grabbed the interest of Information Systems sector in forecasting user's endorsement of technological innovation, it has its weak points and may not be completely employed to comprehend factors which impact users' acceptance. Due to this, a number of other models of expansion have been proposed. The perceived trustworthiness, perceived financial costs and perceived self-efficacy has become absorbed in line with the literature, as an expansion of Technological Acceptance Model (TAM) to look at and understand behavioural motive of users of mobile banking (Cudjoe, Anim, & Nyanyofio, 2015; Marangunić & Granić, 2015). Without a doubt, a number of variables are essential in impacting the decision to make use of or not to make use of automation. A few of these variables might have a direct impact, while others may work together with others. The variables that apply include automation dependability, trust in the automation, self-assurance in a person's own abilities, task intricacy, risk, understanding automation states, as well as exhaustion. Furthermore, besides the workload linked to the operator's other tasks, a related type of workload - which is linked to the decision to make use of the

automation itself - could also have an effect on automation use. This is referred to as cognitive overhead (Parasuraman & Riley, 1997).

2.4 Perceived Ease of Use and Utilization of Automated Processes in Commercial Banks

Davis (1989) put forward the proposition that perceived ease of use is the degree to which a person thinks that employing a particular system would be easy and straight forward; to put it differently, ease of use implies liberty from intricacy and problems. Therefore, an application which is thought of to be simpler to use is often accepted and used by more people (Durodolu, 2016).

Zhu, Linband Hsu (2012) say that Perceived Ease of Use indicates the level to which a person accepts that making use of particular technology is easy and straight forward. The system features can help the simplicity of technology and system utilization can similarly result in the gain of Information Literacy skill. Nanthida (2011) lists particular variables which may impact the ease of use of contemporary resources such as features of information resources, the work experience, technical devices and support, and many others. Listed here are the considerations when analysing Perceived Ease of Use: notion of external control, computer self-efficacy, computer anxiety, internet self-efficacy, perceived enjoyment, information anxiety, as well as objective, usability and behavioural intent to use (Durodolu, 2016).

Self-Efficacy theory (SET) draws on cognitive learning construct, and it is employed to describe emotional changes accomplished by various treatments. Within the SET model, there is differentiation between 2 primary principles associated with the self-efficacy; efficacy anticipations and response outcome anticipations. Efficacy anticipation is the assumption that a person can productively carry out the behaviour necessary to generate the outcome. Furthermore, outcome expectancy can be described as a person's estimation that a specified behaviour will result in specific outcomes. Coming from the SET point of view, self-efficacy is considered the most essential precondition for behavioural change -- individuals might alter their behaviour depending on their confidence in their capacity to

execute that behaviour, as well as the behaviour resulting in a successful end result (Ezzi, 2014).

Additionally, self-efficacy is more pertinent to anticipate consumer behaviour toward services or products which require sophisticated decision-making. A good example is like when using new technology or even a new product, in situations where effective consumption might demand adept performance. With regards to the usage of new technology, numerous studies discovered that computer self-efficacy possesses a robust impact on the behavioural intention to make use of Internet banking system which has been regarded as new technology particularly in developing countries (Ezzi, 2014).

Lin (1999) observed that a customer's interest to obtain the essential skills and computer understanding of the Internet channel, simplicity of use, perception of accessibility, experience, as well as self-efficacy are crucial factors which have an effect on online consumer activities. With regards to the significance of computer expertise (self-efficacy), Chung and Paynter (2002) discovered that deficiency of prior skill in applying Internet banking constrained customer usage and adoption. The findings demonstrated that customers who failed to use the Internet channel failed to feel a need to make use of it. Furthermore, Karjaluoto, Mattila, and Pento (2002) observed that previous computer knowledge; previous technology working experience, personal banking experiences, user reference group, as well as computer perceptions can form customer self-efficacy and truly impact 'Attitude' and also 'Intention to use' internet banking. These researchers' results suggested that the level of Internet usage favourably affects individuals' usage of IB. This shows that the more seasoned in using computer systems and the Internet, the more probable people are to make use of IB (Ezzi, 2014).

While evaluating the effect of 'Computer Self Efficacy' on the behavioural intents, Ariff, Min, Zakuan and Ishak (2013) observed high computer self-efficacy as a beneficial aspect in identifying individuals' intentions to make use of the IB system. Some other scientific studies have likewise showed that 'Computer Self-Efficacy' has powerful impact on utilization of IB products by means of their impact on 'perceived ease of use'

as well as 'perceived usefulness'. 'Perceived ease of use' is seen to mitigate perceived self-efficacy by paying attention to both indirect and direct effects on intentions to consider and make use of IB (Ezzi, 2014).

In Africa, studies have demonstrated that factors associated with self-efficacy predict IB adoption. In Nigeria, gender, education level, as well as employment standing demonstrated substantial capability to influence Nigerian customers' demeanour and intent toward IB usage (Onyia & Tagg, 2011). Njuguna, Ritho, Olweny, and Wanderi (2012) observed in their research that perceived ease of use was a significant factor in the adoption of automated banking in Kenya. Additionally, according to Central Bank of Kenya, in accordance with usage patterns for other innovative developments like mobile financial services, mobile bank accounts such as M-Shwari and KCB M-Pesa happen to be relatively widely favoured among youthful, urban men in Kenya. With regards to age, mobile banking has been well received by youth aged 18-25 years achieving parity with the adoption of conventional accounts. As the populace ages, the difference between utilization of conventional and mobile accounts widens, the former being more preferred. Patterns of adoption of mobile accounts for different persons tightly reflect adoption of conventional accounts, with two thirds as many females using these innovative options when compared with men. There exists, nonetheless, a substantial distinction between rural and urban masses, with more than twice as many urban customers taking on mobile bank accounts as rural customers (CBK, 2016).

2.5 Perceived usefulness and Utilization of Automation Processes in Commercial Banks

Access to information provides the chance for enhanced human ability. The possession of ability to obtain legitimate information is held back by users' unwillingness to settle for and use readily available techniques and methods to gain access to the information. Perceived usefulness, as outlined by Davis (1989), is the degree to which an individual is convinced that using a certain technique or method would boost work efficiency or routine responsibility. This notion, he points out, is moored on the awareness that the capability obtained will reinforce efficiency. In addition, Davis (1989) feels that people

are by natural means augmented for improved productivity by pay raises, job promotions, bonuses, along with other incentives. The TAM unquestionably presents value to a lot of researchers since it has successfully showed how this kind of value can enhance users' job efficiency. Perceived Usefulness has been shown to be an essential factor for technology usage in many recent studies (Durodolu, 2016).

Online banking has grown to be regarded as essentially the most efficient banking transaction procedures since it offers several benefits that offline banking avenues are not able to provide (Huang, Hung & Yen, 2005). Therefore, online banking administrators seek to make use of these benefits to improve the online banking usage rate. Centred to some degree on factors proposed by Lee (2008), there are 2 primary kinds of perceived advantages, which can be classified as indirect and direct benefits. Direct benefits make reference to instant and tangible rewards which customers would benefit from by making use of online banking. As an example, clients can take advantage of a wider selection of financial rewards, quicker transaction pace, and improved information transparency. First, this broader array of financial rewards includes the reduced transaction handling fees, greater deposit rates, and chances to win prizes as well as extra bank card bonus points. Secondly, the quicker transaction pace clearly implies that time may be saved because online banking does not require paper documents; the processing of which can produce errors and delays, and which additionally involves more staff (Lee, 2009).

Online banking computerizes this process by facilitating transactions by means of websites and electronic data interchange, and may also minimise the requirement of clients to correspond with bank personnel about transaction particulars simply because they can be acquired from a website. Thirdly, throughout the transaction, online banking enables customers to monitor contractual performance anytime, or to verify delivery instantly. Put simply, more appropriate data is promptly accessible and transparent to clients. Indirect benefits are those rewards that are less perceptible and hard to evaluate. For instance, online banking enables customer to execute banking dealings all over the world and revel in 24-hour services, and also gives customers more investment prospects and services, like stock quotations as well as news updates. The aspects specified above

are the perceived advantages to be considered in the initial model of online banking adoption (Lee, 2009). In Africa, Perceived usefulness was observed to be a crucial factor in outlining users' adoption of e-banking (Aderonke, 2010). Likewise, Njuguna et al. (2012) found in their study that perceived usefulness was a significant factor in the adoption of automated banking in Kenya.

2.6 Trust and Utilization of Automation Processes in Commercial Banks

Trust, a social psychological notion, appears to be especially vital for comprehending human automation relationships. Trust may be described as the mind-set that an agent will assist to accomplish an individual's objectives in a scenario characterized by ambiguity and susceptibility. In this definition, the agent may be automation or even another person who actively interacts with the surroundings on behalf of an individual. Extensive studies have demonstrated the attitude of trust to be essential in mediating how individuals depend on one another. Sheridan and Hennessy (1984) put forward the proposition that just like trust mediates interactions between individuals; it may also act between the connection between people and automation. Numerous scientific studies have shown that trust is a substantial notion to explain human-automation relationship in both naturalistic and lab surroundings (Lewandowsky, Mundy, & Tan, 2000; Muir & Moray, 1996). These findings show that trust is a mind-set toward automation which affects reliance and that it may be assessed consistently. People have a tendency to depend on automation they trust and have a tendency to reject automation they cannot. By powering reliance, trust aids to triumph over the intellectual intricacy people encounter in handling progressively complex automation. Trust guides - but does not entirely determine - reliance, and the current spike in scientific studies linked to trust and reliance has generated numerous confusing and ostensibly conflicting results (Lee & See, 2004).

Even though IB solutions have been accessible for a while in the developed countries, the idea is comparatively new as a financial delivery solution in the developing nations. Trust, which may accrue from aspects such as perceived security and privacy, is another significant element in electronic avenues that may impact customers' perceptions toward and intentions to participate in banking and financial solutions offered online. McKnight

and Chervany (2002) described trust as the consumers' confidence in quality and dependability of the solutions provided by a corporation. Furthermore, insufficient trust has been acknowledged as one of the main hurdles to the adoption and utilization of IB (Kesharwani & Bisht, 2012). This implies trust is required more when clients process more sensitive private information such as financial data. Consequently, the establishment of confidence and trust has a significant part when offering financial solutions. Suh and Han (2002) observed trust to have nearly the same influence on attitude as 'perceived usefulness' (PU) that they observed in their study to be the most robust variable of attitude anticipation. The results confirmed trust to be a really substantial determinant of 'Intention to Use' IB. Additionally, Reid and Levy (2008) proposed that trust is a substantial factor affecting both 'perceived usefulness' and 'perceived ease-of use' of IB in Jamaica. Therefore, 'Trust,' 'Perceived Security' as well as 'Perceived Privacy' are suggested as key elements in the new model of IB utilization as offered in the current research (Ezzi, 2014).

Based on the results of a South African study, trust was observed to be the most beneficial factor in describing customers' mentality towards Internet banking. The results of the research shows customers' reduced amounts of trust in the Internet banking system. Particularly, customers presumed that the Internet is a secure setting in which to carry out financial activities; nevertheless, they were sceptical with regards to legal set ups sufficiently safeguarding them from issues related to using Internet banking (Maduku, 2013). Njuguna et al. (2012) furthermore found in their study that trust was a significant factor in the adoption of automated banking in Kenya.

2.7 Risk and Utilization of Automation Processes in Commercial Banks

As drawn out by Lee (2009) hazard could happen as far as Privacy, money related, social, time/comfort, and performance loss. Security/protection chance is comprehended to be a forthcoming misfortune because of double dealing or a programmer trading off the security of an online bank client. Phishing is the most recent wrongdoing make through which phishers endeavor to falsely get sensitive data, as login points of interest, security passwords and bank card specifics, by taking on the appearance of a confided in association in an advanced correspondence (Reavley, 2005).A phishing assault happens

when a client gets a beguiling email (otherwise called a parody email) speaking to a dependable source driving them to a similarly tricky web website which is utilized to assemble individual information (Lee, 2009). The two tricks and programmer break result in clients' money related misfortune, as well as rupture clients' close to home security, a key worry of various Internet clients. A considerable measure of clients feel that they are defenseless to wholesale fraud when utilizing electronic saving money arrangements (Littler and Melanthiou, 2006).

Financial risk pertains to the chance of financial loss as a result of transaction mistake or bank account abuse. As outlined by Kuisma, Laukkanen and Hiltunen (2007), numerous clients are scared of losing funds when executing transactions or moving cash online. Presently online banking transactions don't have the peace of mind offered in conventional setting through official procedures and statements. Thus, customers normally have problems in seeking reimbursement when transaction mistakes happen (Kuisma et al., 2007). Social risk appertains to the chance that making use of online banking can result in alienation of one's contacts, loved ones or work group. It is likely that one's societal ranking could be improved or reduced based on how online banking is perceived. It could be that people have damaging or beneficial perceptions of internet banking that consequently impact their views of its users; or, on the other hand, not taking on internet banking could also have negative or positive associations (Lee, 2009).

Time/convenience risk may make reference to losing time and the hassle suffered as a result of delays in getting the payment or the problems of navigation (getting correct services and hyperlinks). Two major reasons for dissatisfying online encounters which may be regarded as a time/convenience risk include a messy or perplexing Website and webpages which are not fast enough to download (Forsythe & Shi, 2003). This may also be associated with the time associated with waiting the website or understanding how to handle internet banking website (Lee, 2009). Performance risk means losses incurred by deficiencies or failures of internet banking sites. Clients in many cases are worried that a malfunction of system servers or disconnection from the net will take place while performing online transactions since circumstances can result in unforeseen losses (Kuisma et al., 2007).

Njuguna et al. (2012) found in their research that risk was a considerable factor in the adoption of automated banking in Kenya. A study in Kenya by Gikandi and Bloor (2010) revealed that adoption of e-banking presented new risks needing new risk management tactics. All banks surveyed had encountered a least one and often numerous cases of both internal and external digital security threats. Furthermore, traditional banking risks were amplified in the presence of internet banking. As an example, 80% of the banking institutions said that even though systems failure is uncommon (case in point at an ATM terminal), once they do happen, the reputational harm suffered takes time to recuperate and an extended failure can result in some clients shifting to a different bank (Gikandi & Bloor, 2010).

2.8 Theoretical Framework

Since the 70s, scientists have focused their endeavours on determining the conditions or aspects that could aid the integration of IS in business. Their research has developed more information on factors that appear to influence the usage of technology. Through the mid-eighties, scientists have focused their initiatives in establishing and examining models which could assist in forecasting system use. These scientific studies strive to learn how the various factors which affect IB adoption work together in their impact on adoption. The primary distinguishing characteristic of these scientific studies, when compared with descriptive studies, is they try to explain and anticipate the pattern of IB usage by using models and theories. The prominent theories come from the discipline of social psychology and they are the following: Theory of reasoned action (TRA) along with Theory of planned behaviour (TPB). TRA and TPB assert that usage behaviour is powered by behavioural motives that are a function of the individual's attitude and also the effect of outside factors (social norms). TPB varies from TRA in that it highlights behavioural controls in acknowledgement that an individual's beliefs concerning the degree to which they can manage a certain outcome is also critical. TPB envisions the control that individuals have over their own behaviour as spread on a continuum from behaviours which are easily performed to those needing significant effort, resources, and

so on. Such controls tend to be likely to perform an essential part in outlining the connection between behavioural intentions and the actual behaviour, the problem of evaluating actual controls has resulted in the application of perceived behavioural control like a proxy (Hanafizadeh, Keating & Khedmatgozar, 2014).

Contingent on these previous concepts, the technology acceptance model (TAM) was offered by Davis in 1986 in his doctorate dissertation. TAM is a variation of the theory of reasoned action and was primarily intended for modelling consumer acceptance of IT (Davis, 1989). Since that time, it has been examined, expanded and updated by several researchers. The model hypothesizes that Technology use is directly dependant on behavioural intention to use, which is consequently determined by users' attitudes when it comes to using the technology as well as the perceived usefulness of the technology. Overall, TAM was empirically verified effective in forecasting a system's adoption and in assisting to comprehend and explain adoption behaviour in Information System implementation. It has been tried in numerous scientific studies and the resources used with the model have been shown to be of good quality and to produce statistically dependable outcomes. A vital aim of TAM is to offer a foundation for tracing the effect of external factors on internal beliefs, attitudes, as well as intentions. It implies that perceived ease of use (PEOU), along with perceived usefulness (PU) are the 2 most significant aspects in outlining system use. Perceived usefulness is an individual's salient perception that the use of the technology will be beneficial in enhancing performance. Perceived ease of use is an individual's salient perception that making use of the technology is going to be free of effort. Other variables are trust and risk linked to the usage of the automated system (Legris, Ingham & Collette, 2003; Lee, 2009).

2.9 Conceptual Framework

The conceptual framework is a set of wide-ranging ideas and principles which are abstracted from the appropriate fields of enquiry and is employed to structure subsequent presentations (Reichel & Ramey, 1987). Additionally, it is a theoretical model for determining the variables under review and more pertinently the connection between the dependent and independent variables. The conceptual framework thus is a kick off point

of reflection between the research and its field of inquiry. In a way that, anytime there exists a plainly articulated conceptual framework, it offers an indication of the link and direction of the essential study variables; therefore offering direction to the whole research procedure. It thus helps the researcher to eventually contextualize and uncover meaning of the study results (Mugenda & Mugenda, 2003).

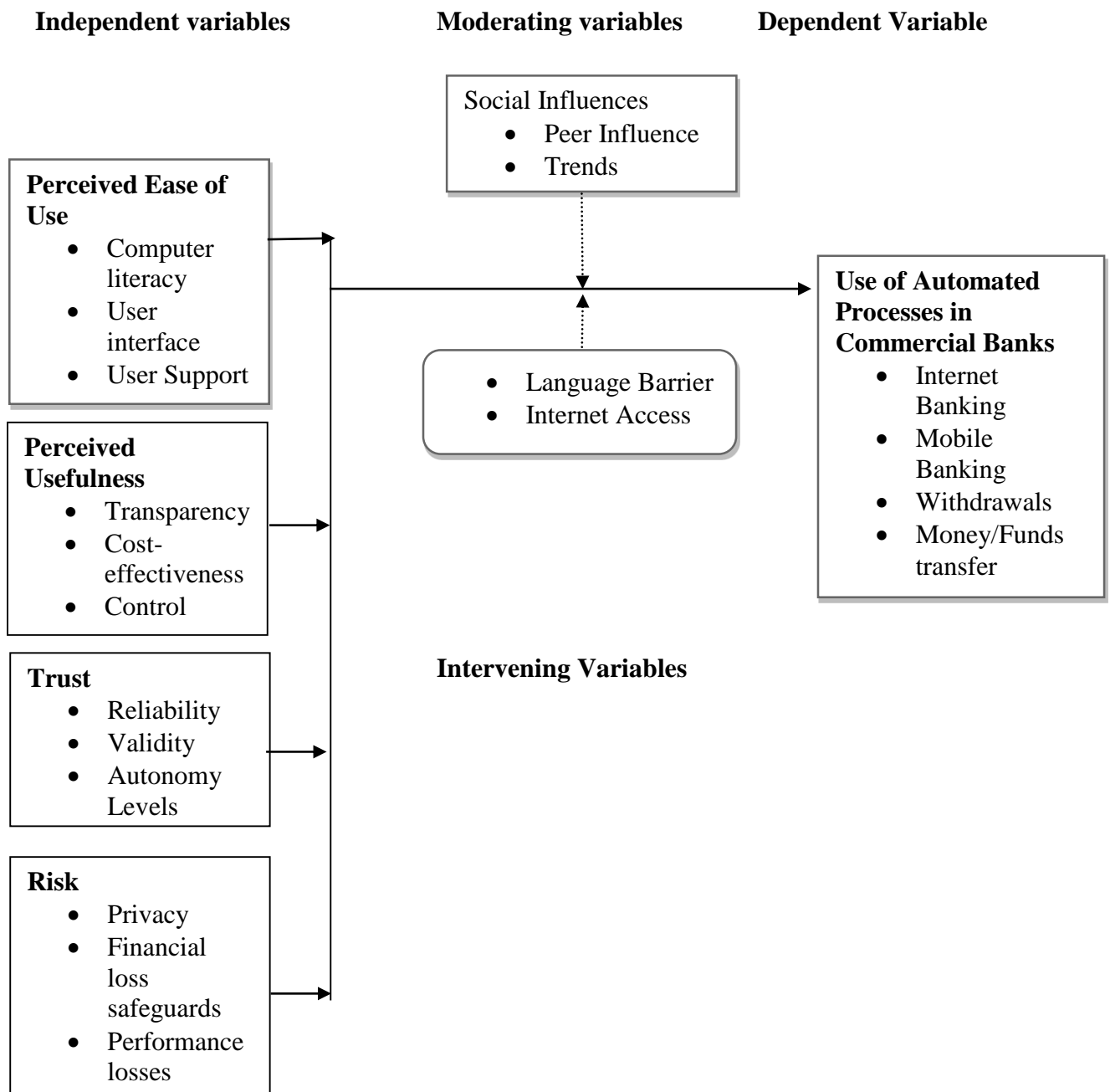


Figure 2.1 Conceptual framework

Technology Acceptance Model showing how Perceived Ease of Use, Perceived Usefulness, Trust and Risk affect the Utilization of Automation Systems. In this study the dependent variable is use of automated processes in banking. The use of automated systems is primarily influenced by the following independent variables: Ease of Use, Perceived Usefulness, trust, and risk associated with the use of the system. However, social influences such as peer influence and prevailing trends can affect the strength of the relationship between the dependent and the independent variables by amplifying or weakening effect between the relationship between the dependent and the independent variables. Additionally, the impact of the independent variables on the dependent variable may be mediated by language barrier and internet access.

2.10 Knowledge Gap

Studies all over the world have explored the factors influencing customers' utilization of automated processes in commercial banks. A review of the findings at the continent level indicates that 59% of the studies were conducted in Asia, 23% in Europe, 9% in America, 7% in Africa, and 2% in Oceania (Hanafizadeh et al., 2014). In Kenya, even though there are studies that have explored factors influencing customers' utilization of automated processes in commercial banks, most of these studies, while few, are not recent. Therefore, there is lack of an up-to-date study that explores the factors influencing customers' utilization of automated processes in commercial banks in Kenya.

Table 2.1: Knowledge Gaps

Types of Knowledge Needed	Key Knowledge Gaps
New knowledge from qualitative and quantitative research	Prevailing customer attitudes that impact uptake of Automated Banking systems in Kenya Factors that impact the attitudes of customers towards Automated systems used in Banking in Kenya

2.11 Summary of the Literature Reviewed

The TAM pinpoints the circumstances or elements which could enhance the adaptation of information systems into business. The theory suggests that there are 4 key factors that anticipate the usage of a technology-based system. They are: ease of use, perceived usefulness, trust, and risk associate with the use of the system. Perceived ease of use is the degree to which a person thinks that using a certain system will be effortless and straight forward. Studies have indicated that ‘Computer Self-Efficacy’ has formidable impact on use of IB solutions through their impact on ‘perceived ease of use’ as well as ‘perceived usefulness’. In Africa, Kenya included, studies have shown that variables linked to self-efficacy anticipate IB adoption.

Perceived usefulness is the degree to which an individual feels that employing a specific method or technique might improve work performance or routine duty. Internet banking is regarded among the most effective banking transaction strategies since it possesses several benefits which offline banking avenues cannot provide. Perceived usefulness was observed to be a crucial factor in outlining users’ adoption of internet banking in several studies around the globe.

Trust seems especially vital for comprehending human automation relationships. Trust can be understood to be the attitude that a mediator will help accomplish an individual’s objectives in a situation characterized by doubt and vulnerability. Trust, which could accrue from factors such as perceived security and privacy, is another significant factor

which could influence customers' attitudes toward and intentions to participate in banking and financial solutions offered online. Moreover, risk is a substantial factor in the usage of automated banking. Risk may transpire in terms of Privacy, financial, social, time/convenience, and performance loss. The adoption of e-banking has presented new risks, which demand new risk-management tactics.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, the methods that were employed in the study are specified. The research design, target population, sampling population, data collection methods and procedures, data analysis methods and justification, and ethical considerations are outlined, in that order.

3.2 Research Design

Research design is defined as plans, or outlines to generate answers to research problem (Orodho, 2004). The study employed a descriptive survey design that provided qualitative and quantitative data appropriate for investigating the factors influencing customers' utilization of automated processes in commercial banks. This method helped to collect quantifiable data in its current and natural setting. Descriptive research survey is designed to allow a researcher obtain information of a problem at hand; survey research is the most commonly used descriptive method in education research (Orodho, 2004).

The research design involved detailed, thick description and inquiry in depth, and direct quotations capturing people's personal perspectives and experiences. This design offered superior advantages over the other methods in that it offered a holistic view of the problem under study. The descriptive survey research design was chosen for this study due to its ability to ensure minimization of bias and maximization of reliability of evidence collected.

3.3 Target population

The total population of the Kikuyu Branch of Equity Bank was 75,000. The population for this study were active account holders and staff at the Kikuyu Branch of Equity Bank (Equity, 2017).

3.4 Sample Size and Sampling Procedure

A sample is part of the target population that has been procedurally selected to represent it. A sample is a sub-group of population that the researcher is interested in to generalize the results (Kumari, 2005; Oso & Onen, 2005). Sampling is the way toward choosing various people for the examination so that the people chosen speak to the bigger gathering from which they are chosen, thus speaking to the qualities found in the whole gathering (Orodho, 2003). According to Best and Khan, (2004) the ideal sample size should be large enough to serve adequate representation of the population about which the researcher wishes to generalize the findings. The (1970) table will be used to determine the sample size for the study. According to the table, a sample for a population of 75,000 is 382. The sample was drawn through simple random sampling of the customers visiting the banking hall. The simple random sampling used was not only ideal for statistical purposes but it was free of classification error and required minimum advance knowledge of the population. Additionally, it required an accurate list of the whole population which was easily obtainable from the bank records in the internal IT system.

3.5 Research Instruments

The research adopted questionnaires as the instrument for data collection. Mugenda & Mugenda (2003) define questionnaire as a written set of questions to which the subjects responds in writing. The research questionnaires were personally distributed to the respondents. Orodho (2003) notes that questionnaires are more efficient because they require less time, are less expensive and are permitted to collect data from a wide population. This questionnaire had both closed and open-ended questions. Questionnaires were hand-delivered to the respondents and collected from them as they exited the banking hall. Additionally, internal bank records were analysed in a bid to extract additional information that may be relevant to our study.

3.6 Validity of research instruments

Instrument validity refers to as the accuracy and meaningfulness of inferences of instruments to measure what they are intended to measure (Mugenda & Mugenda, 2003).

Validity refers to the extent to which the instrument measures what it purports to measure (Borg & Gall, 1996). To determine content validity of the instrument, a pilot study was carried out at the Dagoretti Branch of Equity Bank. This helped the researcher to evaluate validity, clarity of questionnaires, and suitability of language used in the instrument and the feasibility of the study. Items which seemed to fail to measure were modified.

3.7 Reliability of research instruments

Reliability is the measure of the degree to which a research instrument yields consistent result or data after repeated trials Mugenda & Mugenda (2003). In this study, test and re-test method was used during piloting. The respondents were given the questionnaires on different periods of time, at an interval of one week. Similar results were obtained after several tests, then the instrument was deemed reliable. A test method was used to estimate the degree to which the same results will be obtained with a repeated measure of accuracy of the same concept within the questionnaires in order to determine its reliability. This type of reliability is based on stability of the instrument over time. Pearson product moment correlation coefficient of about 0.8 was considered high enough to judge whether the instruments were reliable, and therefore the following formula was used (Mugenda & Mugenda, 2003).

$$r = \frac{N \sum XY - (\sum X) \sum Y}{\left[N \sum X^2 - (\sum X)^2 \right] \left[N \sum Y^2 - (\sum Y)^2 \right]}$$

Where X = Odd scores

Y = Even Scores

$\sum X$ = Sum of X Scores

3.8 Data Collection Procedure

A research permit to conduct the study was obtained from the National Council of Science and Technology (NCOST). The researcher reported to the Branch Manager to obtain permission in order to proceed with the study. Permission was also sought from the Operations Manager at Kikuyu Branch to conduct research as well as provide access

to the records of customers to facilitate data collection. The questionnaires were administered to the customers with the help of the Customer Service Representatives who acted as the research assistants. The questionnaires were collected in good time after completion as the customers exited the banking hall.

3.9 Data Analysis Techniques

Data analysis involves scrutinizing the acquired information and making inferences. The method used in data analysis is influenced by whether the research data is qualitative or quantitative. It also refers to the interpretation of the collected raw data into useful information (Kombo & Tromp 2006). In this study, data was analysed both qualitatively and quantitatively depending on its nature. Data from open ended items in the questionnaires were analysed and reported qualitatively.

Qualitative data was analysed through organizing responses in themes as per the objectives of the study. Responses were organized in various pertinent aspects of the study which include perceived ease of use of automated processes in commercial banks; perceived usefulness of automated processes in commercial banks, role of trust in automated system adoption, and role of risk in automated system adoption.

Quantitative data was analysed through descriptive statistics. Responses from the questionnaires were analysed and reported using simple statistics such as frequencies and percentages. Statistical package for social sciences, SPSS was utilized to provide descriptive statistics.

3.10 Ethical Considerations

Care was taken to guarantee that the research participants were not exposed to hurt at all at all and that the regard for the poise of the study members was prioritized. Full assent was acquired from the members preceding the investigation and the insurance of the security of research members was ensured. An satisfactory dimension of classification of the exploration information was justified. Secrecy of people taking an interest in the examination was safeguarded, and any double dealing or embellishment about the points

and destinations of the exploration was evaded. Likewise, affiliations in any structures, wellsprings of financing, and additionally any conceivable irreconcilable situations must be declared. Any sort of correspondence in connection to the examination was finished with genuineness and straightforwardness and any kind of deceiving data, and portrayal of essential information discoveries in a biased way was avoided.

3.11 Operational Definition of Variables

Table 3.1: Operational Definition of Variables

Objective	Variable	Indicators	Data collection method	Type of Analysis
To determine how perceived ease of use influences customers' utilization of automated processes in commercial banks in Kenya.	Independent variable Perceived ease of use	<ul style="list-style-type: none"> • Computer literacy • User interface • User Support 	Questionnaire	Crosstabulation and Chi-Square tests
To determine how perceived usefulness influences customers' utilization of automated processes in commercial banks in Kenya.	Independent variable perceived usefulness	<ul style="list-style-type: none"> • Transaction Transparency • Cost-effectiveness • Control 	Questionnaire	Crosstabulation and Chi-Square tests
To evaluate how trust in an automated system influences customers' utilization of automated processes in commercial banks in Kenya.	Independent variable trust in an automated system	<ul style="list-style-type: none"> • Reliability • Validity • Autonomy Levels 	Questionnaire	Crosstabulation and Chi-Square tests
To establish how risk influences customers' utilization of automated processes	Independent variable Risk associated	<ul style="list-style-type: none"> • Privacy • Financial loss safeguards 	Questionnaire	Crosstabulation and Chi-Square tests

in commercial banks in Kenya.	with automated system	<ul style="list-style-type: none"> • Performance losses 		
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In quantitative analysis, the researcher used descriptive statistics such as frequencies, percentages, and means to analyse the data. Thereafter, correlation data analysis was employed which involved computing a correlation.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter analyses the data in line with the study objectives. The data is presented in tables and charts and interpreted. In the chapter, an overview of the demographic information of the participants is presented, and thereafter the data related to the objectives of the study is analysed according to the specific objectives in an effort to confirm the veracity of the hypotheses arising from the review of literature. The objectives guiding the data analysis, presentation, and discussion are: Perceived ease of use and utilization of automated processes in commercial banks; perceived usefulness and utilization of automated processes in commercial banks; trust and utilization of automated processes in commercial banks; and risk and utilization of automated processes in commercial banks.

4.2 Demographic Information

In the study, information to gauge the characteristics of those surveyed was collected. The collected information was on the gender, age, education level, language fluency, Access to internet, and self-assessment of computer skills.

Table 4.1: Gender of Customer

		Gender of Customer			Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Male	206	53.9	53.9	53.9
	Female	176	46.1	46.1	100.0
	Total	382	100.0	100.0	

In a bid to gauge the gender demographic characteristics of the respondents, their gender was recorded during the study. Out of those surveyed, a majority of the respondents were male (53.9%) and the female respondents were 46.1%. From our sample, it is seen that

the study was fairly representative of both genders, with approximately equal numbers of both genders participating in the study.

Table 4.2: Age of Customer

		Age of Customer			Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	15 to 25	61	16.0	16.0	16.0
	26 to 35	103	27.0	27.0	42.9
	36 to 45	122	31.9	31.9	74.9
	46 and Above	96	25.1	25.1	100.0
	Total	382	100.0	100.0	

To control for age-related factors that may have influenced the outcome of the study, it was necessary to record the age of the respondents. From those surveyed, 16% were in the 15-25 years age bracket; 27% were between 26 and 35 years; 31.9% were between 36 and 45 years; and 25.1% were 46 years and above. Customers aged between 36 and 45 years formed the majority of those who participated, even though there was a fairly spread distribution across all the age groups.

Table 4.3: Customer Education Level

		Customer Education Level			Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	Primary Level	10	2.6	2.6	2.6
	Secondary Level	79	20.7	20.7	23.3
	College/University	285	74.6	74.6	97.9
	Postgraduate	8	2.1	2.1	100.0
	Total	382	100.0	100.0	

Factors related to the age of the respondents may also impact the outcome of the study, and it may be necessary to control for these factors. As shown in Table 4.3 above, a large majority of the respondents (74.6%) had attained a college/university education; 20.7%

had secondary-level education; 2.6% had Primary level education; and 2.1% were postgraduate-level. Despite the expected impact that education level may have on the adoption of internet banking among the participants, the effects may not be very pronounced since it appears that the vast majority of the respondents are reasonably well-educated.

All those who took part in the study were fluent in Swahili and/or English languages as shown in Table 4.4 below. Kiswahili and English are the languages that are used by the internet banking applications interfaces, and lack of fluency in any of these languages may hinder adoption of internet banking. For our population, however, this is not the case.

Table 4.4: Customer Language Fluency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	382	100.0	100.0	100.0

When queried whether they had access to internet, 84.03% of the respondents said that they had access almost every time; 13.87% said that they had access sometimes; 1.05% said that they had access almost never; 0.52% said that they had access every time; and 0.52% said that they never had access. This is shown in Table 4.5 below. Internet access is another potential barrier to adoption of internet banking services, given that a majority of the services rely on the customer being connected to the internet. However, with a vast majority of the respondents having reported that they had frequent access to the internet, it would appear that there are other barriers to adoption besides internet access.

Table 4.5: Customer's Access to Internet

		Frequency	Percent	Valid Percent	Cumulative Percent
	Never	2	.5	.5	.5
Valid	Almost Never	4	1.0	1.0	1.6
	Sometimes	53	13.9	13.9	15.4

Almost Every Time	321	84.0	84.0	99.5
Every Time	2	.5	.5	100.0
Total	382	100.0	100.0	

Table 4.6: Self-assessment of Computer Skills

		Self-Assessment of Computer Skills			
		Frequency	Percent	Valid Percent	Cumulative Percent
	Poor	30	7.9	7.9	7.9
	Average	158	41.4	41.4	49.2
Valid	Above Average	134	35.1	35.1	84.3
	Excellent	60	15.7	15.7	100.0
	Total	382	100.0	100.0	

From those surveyed, 41.36% had average computer skills; 35.08% had above average computer skills; 15.71% had excellent computer skills; and 7.85% had poor computer skills. Self-assessed computer skills are related to adoption of automation if the self-efficacy theory is applied, as those who are confident of their computer skills are likely to find internet banking easy to use.

4.3 Perceived Ease of Use and Utilization of Automated Processes in Commercial Banks

From the crosstabulation of self-assessment of computer skills and use of internet banking services in Table 4.7 below, it is seen that 93.3% of those whose self-assessment of computer skills was ‘Poor’ said that they never use internet banking services. Conversely, 78.3% of those who rated their Computer Skills as ‘Excellent’ said that they use internet banking services almost every time.

Table 4.7: Crosstabulation of Self-Assessment of Computer Skills and use internet banking services

**Self-Assessment of Computer Skills * Do you use internet banking services?
Crosstabulation**

			Do you use internet banking services?					
			Never	Almost Never	Sometimes	Almost Every Time	Every Time%	Total
Self-Assessment of Computer Skills	Poor	Count	28	2	0	0	0	30
		% within Self-Assessment of Computer Skills	93.3	6.7	0.0	0.0	0.0	100.0
	Average	Count	4	143	2	5	4	158
		% within Self-Assessment of Computer Skills	2.5	90.5	1.3	3.2	2.5	100.0
	Above Average	Count	5	1	124	1	3	134
		% within Self-Assessment of Computer Skills	3.7	0.7	92.5	0.7	2.2	100.0
	Excellent	Count	0	1	2	47	10	60
		% within Self-Assessment of Computer Skills	0.0	1.7	3.3	78.3	16.7	100.0
	Total	Count	37	147	128	53	17	382
		% within Self-Assessment of Computer Skills	9.7	38.5	33.5	13.9	4.5	100.0

Chi-square tests of the crosstabulation of self-assessment of computer skills and use of internet banking services in Table 4.8 below shows that $\chi^2 = 878.025$, $df = 12$ and the $p = .000$. The $p < 0.05$, so we reject the null hypothesis that presumes that there is no association between computer skills and use internet banking services. Clearly, there exists a highly significant association between computer skills and use internet banking services judging from the Cramer's V of 0.875 in table 4.9 below.

According to literature, self-efficacy is the most significant prerequisite for behavioural change- people can alter their routines in line with their confidence in their capacity to execute that routine, and the routine resulting in a productive outcome (Ezzi, 2014). The respondents who rated their computer skills highly, are thus likely to have self-confidence in their ability to use internet banking, and thus they have higher internet banking adoption rates.

Table 4.8: Chi-Square Tests of Crosstabulation of Self-Assessment of Computer Skills and use internet banking services

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	878.025 ^a	12	.000
Likelihood Ratio	719.463	12	.000
N of Valid Cases	382		

a. 4 cells (20.0%) have expected count less than 5. The minimum expected count is 1.34.

Table 4.9: Symmetric Measures of Crosstabulation of Self-Assessment of Computer Skills and use internet banking services

Symmetric Measures^c			
		Value	Approximate Significance
Nominal by Nominal	Phi	1.516	.000
	Cramer's V	.875	.000
N of Valid Cases		382	

From the crosstabulation of Customer's Use of Internet and use of internet banking services in Table 4.10 below, it is seen that 100% of those never use the Internet said that they never use internet banking services. Additionally, even 66.7% of those said that they use the internet all the time said that they almost never use internet banking services.

Chi-square tests of the crosstabulation of Customer's Use of Internet and use of internet banking services in Table 4.11 below show that $\chi^2 = 28.546$, $df = 16$ and the $p = .027$. The $p > 0.05$, so we accept the null hypothesis that presumes that there is no association between Customer's Use of Internet and use internet banking services. Clearly, there exists no significant association between Customer's Use of Internet and use of internet banking services judging from the Cramer's V of 0.137 in Table 4.12 below.

Despite having access to the internet, it is apparent that access does not lend itself to an intention to apply the access as a means of consuming banking services. Other factors such as associated risks and trust must therefore be playing a larger role in determining how consumers choose to use or not to use internet banking services.

Table 4.10: Crosstabulation of Customer's Use of Internet and use of internet banking services

Customer's Use of Internet * Do you use internet banking services? Crosstabulation

			Do you use internet banking services?					
						Almost		
			Almost		Every	Every		
			Never	Never	Sometimes	Time	Time	Total
Customer's Use of Internet	Never	Count	2	0	0	0	0	2
		% within Customer's Use of Internet	100.0	0.0	0.0	0.0	0.0	100.0
	Rarely	Count	1	6	0	0	0	7
		% within Customer's Use of Internet	14.3	85.7	0.0	0.0	0.0	100.0
	Sometimes	Count	4	20	18	8	2	52
		% within Customer's Use of Internet	7.7	38.5	34.6	15.4	3.8	100.0
	Most Times	Count	30	119	109	45	15	318
		% within Customer's Use of Internet	9.4	37.4	34.3	14.2	4.7	100.0
	All the	Count	0	2	1	0	0	3

	Time	% within Customer's Use of Internet	0.0	66.7	33.3	0.0	0.0	100.0
Total	Count		37	147	128	53	17	382
	% within Customer's Use of Internet		9.7	38.5	33.5	13.9	4.5	100.0

Table 4.11: Chi-Square Tests of Crosstabulation of Customer's Use of Internet and use of internet banking services

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	28.546 ^a	16	.027
Likelihood Ratio	22.526	16	.127
N of Valid Cases	382		

a. 16 cells (64.0%) have expected count less than 5. The minimum expected count is .09.

Table 4.12: Symmetric Measures of Crosstabulation of Customer's Use of Internet and use of internet banking services

Symmetric Measures^c

		Value	Approximate Significance
Nominal by Nominal	Phi	.273	.027
	Cramer's V	.137	.027
N of Valid Cases		382	

c. Correlation statistics are available for numeric data only.

Table 4.13: Crosstabulation of Customer's Ownership of Smartphone and use of internet banking services Customer's Ownership of Smartphone * Do you use internet banking services? Crosstabulation

			Do you use internet banking services?					
			Never	Almost Never	Sometimes	Almost Every Time	Every Time	Total
Customer's Ownership of Smartphone	No	Count	3	3	0	1	0	7
		% within Customer's Ownership of Smartphone	42.9	42.9	0.0	14.3	0.0	100.0
	Yes	Count	34	144	128	52	17	375
		% within Customer's Ownership of Smartphone	9.1	38.4	34.1	13.9	4.5	100.0
Total		Count	37	147	128	53	17	382
		% within Customer's Ownership of Smartphone	9.7	38.5	33.5	13.9	4.5	100.0

From the crosstabulation of customer's ownership of smartphone and use of internet banking services in Table 4.13 above, it is seen that 14.3% of those who don't own a smartphone said that they use internet banking services almost every time. Additionally, just 13.9% who own a smartphone said that they use internet banking services almost every time.

Table 4.14: Chi-Square Tests of Crosstabulation of Customer's Ownership of Smartphone and use of internet banking services

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.844 ^a	4	.028
Likelihood Ratio	9.829	4	.043
N of Valid Cases	382		

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is .31.

Chi-square tests of the crosstabulation of customer's ownership of smartphone and use of internet banking services in Table 4.14 above show that $\chi^2 = 10.844$, $df = 4$ and the $p = .028$. The $p > 0.05$, so we accept the null hypothesis that presumes that there is no association between customer's ownership of smartphone and use of internet banking services. Clearly, there exists no significant association between customer's ownership of and use of internet banking services judging from the Cramer's V of 0.168 in table 4.15 below.

Just like access to the internet, it is apparent that smartphone ownership does not lend itself to an intention to apply the device as a means of consuming banking services. In this case – as is with internet access – other factors such as associated risks and trust must therefore be playing a larger role in determining how consumers choose to use or not to use internet banking services.

Table 4.15: Symmetric Measures of Crosstabulation of Customer's Ownership of Smartphone and use of internet banking services

Symmetric Measures^c		Value	Approximate Significance
Nominal by Nominal	Phi	.168	.028
	Cramer's V	.168	.028
N of Valid Cases		382	

c. Correlation statistics are available for numeric data only.

Table 4.16: Crosstabulation of Customer Rating of Technical Support and use of internet banking services

**Customer Rating of Technical Support * Do you use internet banking services?
Crosstabulation**

			Do you use internet banking services?					
			Never	Almost Never	Sometimes	Almost Every Time	Every Time	Total
Customer Rating of Technical Support	Poor	Count	28	12	2	0	0	42
		% within Customer Rating of Technical Support	66.7	28.6	4.8	0.0	0.0	100.0
	Average	Count	6	133	11	5	5	160
		% within Customer Rating of Technical Support	3.8	83.1	6.9	3.1	3.1	100.0
	Above Average	Count	3	1	113	4	3	124
		% within Customer Rating of Technical Support	2.4	0.8	91.1	3.2	2.4	100.0
	Excellent	Count	0	1	2	44	9	56
		% within Customer Rating of Technical Support	0.0	1.8	3.6	78.6	16.1	100.0
Total		Count	37	147	128	53	17	382
		% within Customer Rating of Technical Support	9.7	38.5	33.5	13.9	4.5	100.0

From the crosstabulation of customer rating of technical support and use of internet banking services in Table 4.16 above, it is seen that 66.7% of those whose rating of technical support was poor said that they never use internet banking services. On the other hand, 78.6% of those whose rating of technical support was excellent said that they use internet banking services almost every time.

Table 4.17: Chi-Square Tests of Crosstabulation of Customer Rating of Technical Support and use of internet banking services

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	709.014 ^a	12	.000
Likelihood Ratio	588.602	12	.000
N of Valid Cases	382		

a. 3 cells (15.0%) have expected count less than 5. The minimum expected count is 1.87.

Chi-square tests of the crosstabulation of customer rating of technical support and use of internet banking services in Table 4.17 above show that $\chi^2 = 709.014$, $df = 12$ and the $p = .000$. The $p < 0.05$, so we reject the null hypothesis that presumes that there is no association between customer rating of technical support and use of internet banking services. Clearly, there exists a significant association between customer rating of technical support and use of internet banking services judging from the Cramer's V of 0.787 in Table 4.18 below.

Technical support acts as a means of simplifying the learning curve encountered by potential users, hence easing their transition from conventional banking services to automated processes. It stands to reason, as is apparent from the findings above, that customers who deem the technical support offered by the bank to be insufficient would also find the price of admission to be steep when it comes to internet banking and would as a result fail to adopt internet banking.

Table 4.18: Symmetric Measures of Crosstabulation of Customer Rating of Technical Support and use of internet banking services

Symmetric Measures^c		Value	Approximate Significance
Nominal by Nominal	Phi	1.362	.000
	Cramer's V	.787	.000
N of Valid Cases		382	

c. Correlation statistics are available for numeric data only.

From the crosstabulation of customer rating of app interface and use of internet banking services in Table 4.19 below, it is seen that 96.0% of those who said that the app interface was hard to understand said that they never use internet banking services. On the other hand, only 3.6% of those who said that the app interface was useable said that they never use internet banking services.

Chi-square tests of the crosstabulation of customer rating of app interface and use of internet banking services in Table 4.20 below show that $\chi^2 = 227.891$, $df = 4$ and the $p = .000$. The $p < 0.05$, so we reject the null hypothesis that presumes that there is no association between customer rating of app interface and use of internet banking services. Clearly, there exists a significant association between customer rating of app interface and use of internet banking services judging from the Cramer's V of 0.772 in table 4.21 below.

An app with a hard to understand interface would defeat usability of the app as it would make it hard to use. Perceived ease of use is the degree to which someone believes that employing a certain system would be straightforward and hassle free; to put it differently, ease of use implies liberty from troubles and hassles (Davis, 1989). Therefore, software that is understood to be less complicated to use is generally favoured and used by more people (Durodolu, 2016).

Table 4.19: Crosstabulation of Customer Rating of App Interface and use of internet banking services

**Customer Rating of App Interface * Do you use internet banking services?
Crosstabulation**

			Do you use internet banking services?					
			Never	Almost Never	Sometimes	Almost Every Time	Every Time	Total
Customer Rating of App Interface	Hard to Understand	Count	24	1	0	0	0	25
		% within Customer Rating of App Interface	96.0	4.0	0.0	0.0	0.0	100.0
	Useable	Count	13	146	128	53	17	357
		% within Customer Rating of App Interface	3.6	40.9	35.9	14.8	4.8	100.0
Total		Count	37	147	128	53	17	382
		% within Customer Rating of App Interface	9.7	38.5	33.5	13.9	4.5	100.0
		Customer Rating of App Interface						

Table 4.20: Chi-Square Tests of Crosstabulation of Customer Rating of App Interface and use of internet banking services

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	227.891 ^a	4	.000
Likelihood Ratio	124.708	4	.000
N of Valid Cases	382		

a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is 1.11.

Table 4.21: Symmetric Measures of Crosstabulation of Customer Rating of App Interface and use of internet banking services

		Symmetric Measures ^c	
		Value	Approximate Significance
Nominal by Nominal	Phi	.772	.000
	Cramer's V	.772	.000
N of Valid Cases		382	

c. Correlation statistics are available for numeric data only.

From the crosstabulation of age of customer and use of internet banking services in Table 4.22 below, it is seen that only 1.6% of those who were 15 to 25 years said that they never use internet banking services. On the other hand, 30.2% of those who were 46 and above said that they never use internet banking services.

Table 4.22: Crosstabulation of Age of Customer and use of internet banking services
Age of Customer * Do you use internet banking services? Crosstabulation

			Do you use internet banking services?					
			Never	Almost Never	Sometimes	Almost Every Time	Every Time	Total
Age of Customer	15 to 25	Count	1	29	22	7	2	61
		% within Age of Customer	1.6	47.5	36.1	11.5	3.3	100.0
	26 to 35	Count	5	28	44	20	6	103
		% within Age of Customer	4.9	27.2	42.7	19.4	5.8	100.0
	36 to 45	Count	2	33	58	22	7	122
		% within Age of Customer	1.6	27.0	47.5	18.0	5.7	100.0
	46 and Above	Count	29	57	4	4	2	96
		% within Age of Customer	30.2	59.4	4.2	4.2	2.1	100.0
Total		Count	37	147	128	53	17	382
		% within Age of Customer	9.7	38.5	33.5	13.9	4.5	100.0

Chi-square tests of the crosstabulation of age of customer and use of internet banking services in Table 4.23 below show that $\chi^2 = 123.636$, $df = 12$ and the $p = .000$. The $p < 0.05$, so we reject the null hypothesis that presumes that there is no association between age of customer and use of internet banking services. Clearly, there exists an association

between age of customer and use of internet banking services though not a significant one judging from the Cramer's V of 0.328 in Table 4.24 below.

Despite the fact that older respondents may exhibit a resistance to adopting new technologies – and younger people's affinity for technology – the effect is perhaps diluted by the elevated education levels in the population as well as the interplay of other variables beyond the perceived ease of use.

Table 4.23: Chi-Square Tests of Crosstabulation of Age of Customer and use of internet banking services

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	123.636 ^a	12	.000
Likelihood Ratio	131.117	12	.000
N of Valid Cases	382		

a. 3 cells (15.0%) have expected count less than 5. The minimum expected count is 2.71.

Table 4.24: Symmetric Measures of Crosstabulation of Age of Customer and use of internet banking services

Symmetric Measures^c			
		Value	Approximate Significance
Nominal by Nominal	Phi	.569	.000
	Cramer's V	.328	.000
N of Valid Cases		382	

c. Correlation statistics are available for numeric data only.

4.4 Perceived Usefulness and Utilization of Automated Processes in Commercial Banks

Table 4.25: Crosstabulation of perceived internet banking transparency and use of internet banking services

Do you think that internet banking makes access to transaction information more transparent? * Do you use internet banking services? Crosstabulation

Do you use internet banking services?

			Do you use internet banking services?					
			Almost		Every		Total	
			Never	Sometimes	Time	Time		
Do you think that internet banking makes access to transaction information more transparent?	Strongly Disagree	Count	36	1	0	0	0	37
		% within Do you think that internet banking makes access to transaction information more transparent?	97.3	2.7	0.0	0.0	0.0	100.0
	Disagree	Count	1	146	0	0	0	147
		% within Do you think that internet banking makes access to transaction information more transparent?	0.7	99.3	0.0	0.0	0.0	100.0
	Neutral	Count	0	0	128	0	0	128
		% within Do you think that internet banking makes access to transaction information more transparent?	0.0	0.0	100.0	0.0	0.0	100.0
	Agree	Count	0	0	0	53	0	53
		% within Do you think that internet banking makes access to transaction information more transparent?	0.0	0.0	0.0	100.0	0.0	100.0
	Strongly Agree	Count	0	0	0	0	17	17
		% within Do you think that internet banking makes access to transaction information more transparent?	0.0	0.0	0.0	0.0	100.0	100.0
Total		Count	37	147	128	53	17	382
		% within Do you think that internet banking makes access to transaction information more transparent?	9.7	38.5	33.5	13.9	4.5	100.0

From the crosstabulation of perceived internet banking transparency and use of internet banking services in Table 4.25 above, it is seen that 97.3% of those who strongly disagree that internet banking makes access to transaction information more transparent said that

they never use internet banking services. On the other hand, 100% of those who strongly agree that internet banking makes access to transaction information more transparent said that they use internet banking services every time.

Table 4.26: Chi-Square Tests of Crosstabulation of perceived internet banking transparency and use of internet banking services

		Chi-Square Tests		
		Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square		1502.591 ^a	16	.000
Likelihood Ratio		1027.438	16	.000
N of Valid Cases		382		

a. 6 cells (24.0%) have expected count less than 5. The minimum expected count is .76.

Chi-square tests of the crosstabulation of perceived internet banking transparency and use of internet banking services in Table 4.26 above show that $\chi^2 = 1502.591$, $df = 16$ and the $p = .000$. The $p < 0.05$, so we reject the null hypothesis that presumes that there is no association between perceived internet banking transparency and use of internet banking services. Clearly, there exists a significant association between perceived internet banking transparency and use of internet banking services judging from the Cramer's V of 0.992 in table 4.27 below.

Table 4.27: Symmetric Measures of Crosstabulation of perceived internet banking transparency and use of internet banking services

		Symmetric Measures ^c	
		Value	Approximate Significance
Nominal by Nominal	Phi	1.983	.000
	Cramer's V	.992	.000
N of Valid Cases		382	

c. Correlation statistics are available for numeric data only.

Table 4.28: Crosstabulation of Perceived Value of Internet Banking and use of internet banking services

Internet banking is worthwhile when it comes to time saved in carrying out transactions * Do you use internet banking services? Crosstabulation

			Do you use internet banking services?					
			Never	Almost Never	Sometimes	Almost Every Time	Every Time	Total
Internet banking is worthwhile when it comes to time saved in carrying out transactions	Strongly Disagree	Count	36	2	0	0	0	38
		% within Internet banking is worthwhile when it comes to time saved in carrying out transactions	94.7	5.3	0.0	0.0	0.0	100.0
	Disagree	Count	1	145	0	0	0	146
		% within Internet banking is worthwhile when it comes to time saved in carrying out transactions	0.7	99.3	0.0	0.0	0.0	100.0
	Neutral	Count	0	0	127	0	0	127
		% within Internet banking is worthwhile when it comes to time saved in carrying out transactions	0.0	0.0	100.0	0.0	0.0	100.0
	Agree	Count	0	0	1	52	0	53
		% within Internet banking is worthwhile when it comes to time saved in carrying out transactions	0.0	0.0	1.9	98.1	0.0	100.0
	Strongly agree	Count	0	0	0	1	17	18
		% within Internet banking is worthwhile when it comes to time saved in carrying out transactions	0.0	0.0	0.0	5.6	94.4	100.0
Total		Count	37	147	128	53	17	382
		% within Internet banking is worthwhile when it comes to time saved in carrying out transactions	9.7	38.5	33.5	13.9	4.5	100.0

From the crosstabulation of perceived value of internet banking and use of internet banking services in Table 4.28 above, it is seen that 94.7% of those who strongly disagree that Internet banking is worthwhile when it comes to time saved in carrying out transactions said that they never use internet banking services. On the other hand, 94.4%

of those who strongly agree that Internet banking is worthwhile when it comes to time saved in carrying out transactions said that they use internet banking services every time.

Table 4.29: Chi-Square Tests of Crosstabulation of Perceived Value of Internet Banking and use of internet banking services

Chi-Square Tests			
	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	1452.651 ^a	16	.000
Likelihood Ratio	1003.330	16	.000
N of Valid Cases	382		

a. 6 cells (24.0%) have expected count less than 5. The minimum expected count is .80.

Table 4.30: Symmetric Measures of Crosstabulation of Perceived Value of Internet Banking and use of internet banking services

Symmetric Measures ^c			
		Value	Approximate Significance
Nominal by Nominal	Phi	1.950	.000
	Cramer's V	.975	.000
N of Valid Cases		382	

c. Correlation statistics are available for numeric data only.

Chi-square tests of the crosstabulation of perceived value of internet banking and use of internet banking services in Table 4.29 above show that $\chi^2 = 1452.651$, $df = 16$ and the $p = .000$. The $p < 0.05$, so we reject the null hypothesis that presumes that there is no association between perceived value of internet banking and use of internet banking services. Clearly, there exists a significant association between perceived value of internet banking and use of internet banking services judging from the Cramer's V of 0.975 in Table 4.30 above.

Since those that believe that Internet banking is worthwhile when it comes to time saved in carrying out transactions deem it to be useful, it seen that they are prone to adopting internet banking. Perceived usefulness, as outlined by Davis (1989), is the degree to which an individual is convinced that using a certain technique or method would boost work efficiency or routine responsibility. This notion, he clarifies, is grounded on the thought that the capability obtained will bolster performance.

From the crosstabulation of perceived control and use of internet banking services in Table 4.31 below, it is seen that only 0.5% of those who said that Internet banking afford more control over their banking transactions said that they never use internet banking services. On the other hand, 78.8% of those who said that Over-the-Counter Transaction affords more control over their banking transactions said that they almost never use internet banking services.

Table 4.31: Crosstabulation of Perceived Control and use of internet banking services
What gives you more control over your banking transactions * Do you use internet banking services? Crosstabulation

			Do you use internet banking services?					Total
			Never	Almost Never	Sometimes	Almost Every Time	Every Time	Total
what gives you more control over your banking transactions	Internet Banking	Count	1	2	127	51	17	198
		% within what gives you more control over your banking transactions	0.5	1.0	64.1	25.8	8.6	100.0
	Over-the-Counter Transaction	Count	36	145	1	2	0	184
		% within what gives you more control over your banking transactions	19.6	78.8	0.5	1.1	0.0	100.0
Total		Count	37	147	128	53	17	382
		% within what gives you more control over your banking transactions	9.7	38.5	33.5	13.9	4.5	100.0

Table 4.32: Chi-Square Tests of Crosstabulation of Perceived Control and use of internet banking services

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	358.519 ^a	4	.000
Likelihood Ratio	469.967	4	.000
N of Valid Cases	382		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.19.

Table 4.33: Symmetric Measures of Crosstabulation of Perceived Value of Internet Banking and use of internet banking services

Symmetric Measures^c			
		Value	Approximate Significance
Nominal by Nominal	Phi	.969	.000
	Cramer's V	.969	.000
N of Valid Cases		382	

c. Correlation statistics are available for numeric data only.

Chi-square tests of the crosstabulation of perceived control and use of internet banking services in Table 4.32 above show that $\chi^2 = 358.519$, $df = 4$ and the $p = .000$. The $p < 0.05$, so we reject the null hypothesis that presumes that there is no association between perceived control and use of internet banking services. Clearly, there exists a significant association between perceived value of internet banking and use of internet banking services judging from the Cramer's V of 0.969 in table 4.33 above.

Online banking offers several benefits which offline banking options are not able to give (Huang, Hung & Yen, 2005). These benefits boost the online banking adoption rate. As an example, consumers may take advantage of a broader array of financial benefits, quicker transaction rate, and improved information transparency (Lee, 2008).

4.5 Trust and Utilization of Automated Processes in Commercial Banks

Table 4.34: Crosstabulation of Reliance Score of Internet Banking and use of Internet banking services

Can rely on the phone/computer as a banking agent * Do you use internet banking services? Crosstabulation

			Do you use internet banking services?					
			Almost		Almost	Every	Every	Total
			Never	Never	Sometimes	Time	Time	
Can rely on the phone/computer as a banking agent	Strongly Disagree	Count	34	3	0	0	0	37
		% within Can rely on the phone/computer as a banking agent	91.9	8.1	0.0	0.0	0.0	100.0
	Disagree	Count	3	144	0	0	0	147
		% within Can rely on the phone/computer as a banking agent	2.0	98.0	0.0	0.0	0.0	100.0
	Neutral	Count	0	0	128	0	0	128
		% within Can rely on the phone/computer as a banking agent	0.0	0.0	100.0	0.0	0.0	100.0
	Agree	Count	0	0	0	53	0	53
		% within Can rely on the phone/computer as a banking agent	0.0	0.0	0.0	100.0	0.0	100.0
	Strongly Agree	Count	0	0	0	0	17	17
		% within Can rely on the phone/computer as a banking agent	0.0	0.0	0.0	0.0	100.0	100.0
	Total	Count	37	147	128	53	17	382
		% within Can rely on the phone/computer as a banking agent	9.7	38.5	33.5	13.9	4.5	100.0

From the crosstabulation of reliance score of internet banking and use of internet banking services in Table 4.34 above, it is seen that 91.9% of those who strongly disagree that they can rely on the phone/computer as a banking agent said that they never use internet

banking services. On the other hand, 100% of those who strongly agree that they can rely on the phone/computer as a banking agent said that they use internet banking services every time.

Table 4.35: Chi-Square Tests of Crosstabulation of Reliance Score of Internet Banking and use of Internet banking services

Chi-Square Tests			
	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	1454.397 ^a	16	.000
Likelihood Ratio	998.493	16	.000
N of Valid Cases	382		

a. 6 cells (24.0%) have expected count less than 5. The minimum expected count is .76.

Table 4.36: Symmetric Measures of Crosstabulation of Reliance Score of Internet Banking and use of Internet banking services

Symmetric Measures^c			
		Value	Approximate Significance
Nominal by Nominal	Phi	1.951	.000
	Cramer's V	.976	.000
N of Valid Cases		382	

c. Correlation statistics are available for numeric data only.

Chi-square tests of the crosstabulation of reliance score of internet banking and use of internet banking services in Table 4.35 above show that $\chi^2 = 1454.397$, $df = 16$ and the $p = .000$. The $p < 0.05$, so we reject the null hypothesis that presumes that there is no association between reliance score of internet banking and use of internet banking services. Clearly, there exists a significant association between reliance score of internet

banking and use of internet banking services judging from the Cramer's V of 0.976 in table 4.36 above.

Trust, which can arise from aspects such as perceived security and privacy, is a significant element in electronic channels which could have an effect on customers' perceptions toward and intentions to take part in banking and monetary services offered online. Furthermore, insufficient trust continues to be acknowledged as one of the leading hurdles to the embracing and utilization of IB (Kesharwani & Bisht, 2012). This implies trust is required more when clients process more delicate private information such as financial information. Consequently, the establishment of trust and confidence has a significant role when offering financial services

From the crosstabulation of perceived reliance score of transaction information and use of internet banking services in Table 4.37 below, it is seen that 92.5% of those who strongly disagree that transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank said that they never use internet banking services. On the other hand, 88.9% of those who strongly agree that transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank said that they use internet banking services every time.

Chi-square tests of the perceived reliance score of transaction information and use of internet banking services in Table 4.38 below show that $\chi^2 = 1388.364$, $df = 16$ and the $p = .000$. The $p < 0.05$, so we reject the null hypothesis that presumes that there is no association between perceived reliance score of transaction information and use of internet banking services. Clearly, there exists a significant association between perceived reliance score of transaction information and use of internet banking services judging from the Cramer's V of 0.953 in table 4.39 below.

Trust is a disposition toward automation that influences reliance. People have a tendency to be reliant upon automation that they trust and often cast away automation they do not. By powering reliance, trust aids to defeat the cognitive intricacy people encounter in handling increasingly complex automation. Trust directs - but does not entirely determine - reliance (Lee & See, 2004).

Table 4.37: Crosstabulation of Perceived Reliance Score of Transaction Information and use of internet banking services

Transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank * Do you use internet banking services? Crosstabulation

			Do you use internet banking services?					
			Almost t		Almost Every Every			
			Never	Never	Some times	Time	Time	Total
Transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank	Strongly Disagree	Count	37	3	0	0	0	40
		% within Transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank	92.5	7.5	0.0	0.0	0.0	100.0
	Disagree	Count	0	141	1	0	0	142
		% within Transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank	0.0	99.3	0.7	0.0	0.0	100.0
	Neutral	Count	0	3	127	0	0	130
		% within Transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank	0.0	2.3	97.7	0.0	0.0	100.0
	Agree	Count	0	0	0	51	1	52
		% within Transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank	0.0	0.0	0.0	98.1	1.9	100.0
	Strongly Agree	Count	0	0	0	2	16	18
		% within Transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank	0.0	0.0	0.0	11.1	88.9	100.0
Total		Count	37	147	128	53	17	382
		% within Transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank	9.7	38.5	33.5	13.9	4.5	100.0

Table 4.38: Chi-Square Tests of Crosstabulation of Perceived Reliance Score of Transaction Information and use of internet banking services

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1388.364 ^a	16	.000
Likelihood Ratio	964.406	16	.000
N of Valid Cases	382		

a. 6 cells (24.0%) have expected count less than 5. The minimum expected count is .80.

Table 4.39: Symmetric Measures of Crosstabulation of Reliance Score of Internet Banking and use of Internet banking services

Symmetric Measures^c

		Value	Approximate Significance
Nominal by Nominal	Phi	1.906	.000
	Cramer's V	.953	.000
N of Valid Cases		382	

c. Correlation statistics are available for numeric data only.

Table 4.40: Crosstabulation of Perceived Reliance Score of Transaction Information and Perceived Role of Internet Banking

Transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank * How do you think internet banking should be used? Crosstabulation

			How do you think internet banking should be used?		
			To Supplement		
			Over the	For all banking	
			Counter	transactions	Total
			transactions	transactions	
Transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank	Strongly Disagree	Count	39	1	40
		% within Transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank	97.5	2.5	100.0
	Disagree	Count	137	5	142
		% within Transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank	96.5	3.5	100.0
	Neutral	Count	6	124	130
		% within Transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank	4.6	95.4	100.0
	Agree	Count	1	51	52
		% within Transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank	1.9	98.1	100.0
	Strongly Agree	Count	1	17	18
		% within Transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank	5.6	94.4	100.0
Total		Count	184	198	382
		% within Transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank	48.2	51.8	100.0

From the crosstabulation of perceived reliance score of transaction information and perceived role of internet banking in Table 4.40 above, it is seen that 97.5% of those who strongly disagree that transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank said that they think internet banking should be used to supplement over the counter transactions. On the other hand, 94.4% of those who strongly agree that transaction information provided by the

banking app would be as reliable as the information provided over the counter at the bank said that they think internet banking should be used for all banking transactions.

Table 4.41: Chi-Square Tests of Crosstabulation of Perceived Reliance Score of Transaction Information and Perceived Role of Internet Banking

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	328.139 ^a	4	.000
Likelihood Ratio	410.178	4	.000
N of Valid Cases	382		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.67.

Table 4.42: Symmetric Measures of Crosstabulation of Perceived Reliance Score of Transaction Information and Perceived Role of Internet Banking

Symmetric Measures^c			
		Value	Approximate Significance
Nominal by Nominal	Phi	.927	.000
	Cramer's V	.927	.000
N of Valid Cases		382	

c. Correlation statistics are available for numeric data only.

Chi-square tests of the perceived reliance score of transaction information and perceived role of internet banking in Table 4.41 above show that $\chi^2 = 328.139$, $df = 4$ and the $p = .000$. The $p < 0.05$, so we reject the null hypothesis that presumes that there is no association between perceived reliance score of transaction information and perceived role of internet banking. Clearly, there exists a significant association between perceived reliance score of transaction information and perceived role of internet banking judging from the Cramer's V of 0.927 in table 4.42 above.

The willingness of the people who feel that internet banking is a reliable alternative to conventional banking see it as an alternative that can replace conventional banking underline the fact that people have a tendency to be reliant upon automation that they trust and often cast away automation they do not (Lee & See, 2004).

4.6 Risk and Utilization of Automated Processes in Commercial Banks

From the crosstabulation of perceived security offered by internet banking and use of internet banking services in Table 4.43 below, it is seen that 93.3% of those whose rating of the security and privacy offered by internet banking was 'Poor' said that they never use internet banking services. Conversely, 78.3% of those whose rating of the security and privacy offered by internet banking was 'Excellent' said that they use internet banking services almost every time.

Chi-square tests of the perceived security offered by internet banking and use of internet banking services in Table 4.44 below show that $\chi^2 = 878.025$, $df = 12$ and the $p = .000$. The $p < 0.05$, so we reject the null hypothesis that presumes that there is no association between perceived security offered by internet banking and use of internet banking services. Clearly, there exists a significant association between perceived security offered by internet banking and use of internet banking services judging from the Cramer's V of 0.875 in table 4.45 below.

Privacy/security risk pertains to a probable loss on account of fraud or a hacker compromising the security of an internet-based bank customer. Both fraud and hacker attack not only result in users' fiscal loss, but also break users' privacy, a serious concern of several Internet users. A lot of customers are convinced they are susceptible to identity theft when using online banking services (Littler & Melanthiou, 2006). This would explain why many of those who rate the security and privacy of internet banking poorly have low adoption rates.

Table 4.43: Crosstabulation of Perceived security offered by internet banking and use of internet banking services

How would you rate the security and privacy offered by internet banking? * Do you use internet banking services? Crosstabulation

			Do you use internet banking services?					
			Never	Almost Never	Sometimes	Almost Every Time	Every Time	Total
How would you rate the security and privacy offered by internet banking?	poor	Count	28	2	0	0	0	30
		% within How would you rate the security and privacy offered by internet banking?	93.3	6.7	0.0	0.0	0.0	100.0
	Average	Count	4	143	2	5	4	158
		% within How would you rate the security and privacy offered by internet banking?	2.5	90.	1.3	3.2	2.5	100.0
	Above	Count	5	1	124	1	3	134
		% within How would you rate the security and privacy offered by internet banking?	3.7	0.7	92.5	0.7	2.2	100.0
	Excellent	Count	0	1	2	47	10	60
		% within How would you rate the security and privacy offered by internet banking?	0.0	1.7	3.3	78.3	16.7	100.0
	Total	Count	37	147	128	53	17	382
		% within How would you rate the security and privacy offered by internet banking?	9.7	38.5	33.5	13.9	4.5	100.0

Table 4.44: Chi-Square Tests of Crosstabulation of Perceived security offered by internet banking and use of internet banking services

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	878.025 ^a	12	.000
Likelihood Ratio	719.463	12	.000
N of Valid Cases	382		

a. 4 cells (20.0%) have expected count less than 5. The minimum expected count is 1.34.

Table 4.45: Symmetric Measures of Crosstabulation of Perceived security offered by internet banking and use of internet banking services

Symmetric Measures^c			
		Value	Approximate Significance
Nominal by Nominal	Phi	1.516	.000
	Cramer's V	.875	.000
N of Valid Cases		382	

c. Correlation statistics are available for numeric data only.

Table 4.46: Crosstabulation of Perceived likelihood of losing money during a transaction over the internet and use of internet banking services

What is the likelihood of losing money during a transaction over the internet? * Do you use internet banking services? Crosstabulation

			Do you use internet banking services?					
			Almost		Almost			
			Never	Never	Sometimes	Every	Every	Total
						Time	Time	
What is the	Very	Count	28	7	0	0	0	35
likelihood of	Good	% within what is the	80.0	20.0	0.0	0.0	0.0	100.0
losing money	Chance	likelihood of losing money						
during a		during a transaction over						
transaction		the internet?						
over the	Some	Count	4	138	3	5	4	154
internet?	Chance	% within what is the	2.6	89.6	1.9	3.2	2.6	100.0
		likelihood of losing money						
		during a transaction over						
		the internet?						
	Very	Count	5	1	123	1	3	133
	Little	% within what is the	3.8	0.8	92.5	0.8	2.3	100.0
	Chance	likelihood of losing money						
		during a transaction over						
		the internet?						
	No	Count	0	1	2	47	10	60
	Chance	% within what is the	0.0	1.7	3.3	78.3	16.7	100.0
		likelihood of losing money						
		during a transaction over						
		the internet?						
Total		Count	37	147	128	53	17	382
		% within what is the	9.7	38.5	33.5	13.9	4.5	100.0
		likelihood of losing money						
		during a transaction over						
		the internet?						

From the crosstabulation of perceived likelihood of losing money during a transaction over the internet and use of internet banking services in Table 4.46 above, it is seen that 80.0% of those who said there is a very good chance for the likelihood of losing money

during a transaction over the internet said that they never use internet banking services. Conversely, 78.3% of those who said there is no Chance for the likelihood of losing money during a transaction over the internet said that they use internet banking services almost every time.

Table 4.47: Chi-Square Tests of Crosstabulation of Perceived likelihood of losing money during a transaction over the internet and use of internet banking services

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	825.073 ^a	12	.000
Likelihood Ratio	692.053	12	.000
N of Valid Cases	382		

a. 4 cells (20.0%) have expected count less than 5. The minimum expected count is 1.56.

Table 4.48: Symmetric Measures of Crosstabulation of Perceived likelihood of losing money during a transaction over the internet and use of internet banking services

Symmetric Measures^c			
		Value	Approximate Significance
Nominal by Nominal	Phi	1.470	.000
	Cramer's V	.849	.000
N of Valid Cases		382	

c. Correlation statistics are available for numeric data only.

Chi-square tests of the perceived likelihood of losing money during a transaction over the internet and use of internet banking services in Table 4.47 above show that $\chi^2 = 825.073$, $df = 12$ and the $p = .000$. The $p < 0.05$, so we reject the null hypothesis that presumes that there is no association between perceived likelihood of losing money during a transaction over the internet and use of internet banking services. Clearly, there exists a significant

association between perceived likelihood of losing money during a transaction over the internet and use of internet banking services judging from the Cramer's V of 0.849 in Table 4.48 above.

The chance of financial loss as a result of transaction mistake or bank account misuse is known as financial risk. As outlined by Kuisma, Laukkanen & Hiltunen (2007), a lot of customers are scared of losing money while carrying out transactions or moving money online. Presently, online banking transactions lack the guarantees offered in a conventional setting by way of formal proceedings and receipts. As a result, customers normally have problems in seeking compensation when transaction mistakes happen (Kuisma et al., 2007). This would explain why many of those who see the perceived likelihood of losing money as being high have low adoption rates.

From the crosstabulation of perceived likelihood of delays of receiving the payment during a transaction over the internet and use of internet banking services in Table 4.49 below, it is seen that 84.8% of those who said there is a very good chance for the likelihood of delays of receiving the payment during a transaction over the internet said that they never use internet banking services. Conversely, 78.3% of those who said there is no Chance for the likelihood of delays of receiving the payment during a transaction over the internet said that they use internet banking services almost every time.

Chi-square tests of the crosstabulation of perceived likelihood of delays of receiving the payment during a transaction over the internet and use of internet banking services in Table 4.50 below show that $\chi^2 = 842.500$, $df = 12$ and the $p = .000$. The $p < 0.05$, so we reject the null hypothesis that presumes that there is no association between perceived likelihood of delays of receiving the payment during a transaction over the internet and use of internet banking services. Clearly, there exists a significant association between perceived likelihood of delays of receiving the payment during a transaction over the internet and use of internet banking services judging from the Cramer's V of 0.857 in table 4.51 below.

These results are in line with literature. The loss of time and hassles suffered as a result of delays of getting a payment or the complications associated with navigation is known as Time/convenience risk, and they are a barrier to internet banking adoption. Two primary reasons for dissatisfying online experiences which may be regarded as a

time/convenience risk include things like a cluttered or perplexing Web pages and sites which are not quick enough to download (Forsythe & Shi, 2003). It may also be associated with the amount of time linked to waiting for the website or finding out how to use online banking websites (Lee, 2009).

Table 4.49: Crosstabulation of perceived likelihood of delays of receiving the payment during a transaction over the internet and use of internet banking services

What is the likelihood of delays of receiving the payment during a transaction over the internet? * Do you use internet banking services? Crosstabulation

			Do you use internet banking services?					
			Never	Almost Never	Sometimes	Almost Every Time	Every Time	Total
What is the likelihood of delays of receiving the payment during a transaction over the internet?	Very Good Chance	Count	28	5	0	0	0	33
		% within What is the likelihood of delays of receiving the payment during a transaction over the internet?	84.8	15.2	0.0	0.0	0.0	100.0
	Some Chance	Count	4	140	3	5	4	156
		% within What is the likelihood of delays of receiving the payment during a transaction over the internet?	2.6	89.7	1.9	3.2	2.6	100.0
	Very Little Chance	Count	5	1	123	1	3	133
		% within What is the likelihood of delays of receiving the payment during a transaction over the internet?	3.8	0.8	92.5	0.8	2.3	100.0
	No Chance	Count	0	1	2	47	10	60
		% within What is the likelihood of delays of receiving the payment during a transaction over the internet?	0.0	1.7	3.3	78.3	16.7	100.0
Total		Count	37	147	128	53	17	382
		% within What is the likelihood of delays of receiving the payment during a transaction over the internet?	9.7	38.5	33.5	13.9	4.5	100.0

Table 4.50: Chi-Square Tests of Crosstabulation of perceived likelihood of delays of receiving the payment during a transaction over the internet and use of internet banking services

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	842.500 ^a	12	.000
Likelihood Ratio	698.574	12	.000
N of Valid Cases	382		

a. 4 cells (20.0%) have expected count less than 5. The minimum expected count is 1.47.

Table 4.51: Symmetric Measures of Crosstabulation of perceived likelihood of delays of receiving the payment during a transaction over the internet and use of internet banking services

Symmetric Measures^c			
		Value	Approximate Significance
Nominal by Nominal	Phi	1.485	.000
	Cramer's V	.857	.000
N of Valid Cases		382	

c. Correlation statistics are available for numeric data only.

Table 4.52: Crosstabulation of Perceived level of risk that internet banking services would suffer from outages and use of internet banking services

What is the level of risk that internet banking services suffer from outages? * Do you use internet banking services? Crosstabulation

			Do you use internet banking services?					
			Never	Almost Never	Sometimes	Almost Every Time	Every Time	Total
What is the level of risk that internet banking services suffer from outages?	High	Count	28	3	1	1	0	33
		% within What is the level of risk that internet banking services suffer from outages?	84.8	9.1	3.0	3.0	0.0	100.0
	Moderate	Count	4	142	3	4	3	156
		% within What is the level of risk that internet banking services suffer from outages?	2.6	91.0	1.9	2.6	1.9	100.0
	Low	Count	5	1	122	1	3	132
		% within What is the level of risk that internet banking services suffer from outages?	3.8	0.8	92.4	0.8	2.3	100.0
	None	Count	0	1	2	47	10	60
		% within What is the level of risk that internet banking services suffer from outages?	0.0	1.7	3.3	78.3	16.7	100.0
Total		Count	37	147	128	53	16	381
		% within What is the level of risk that internet banking services suffer from outages?	9.7	38.6	33.6	13.9	4.2	100.0

From the crosstabulation of perceived level of risk that internet banking services would suffer from outages and use of internet banking services in Table 4.52 above, it is seen that 84.8% of those whose rated level of risk that internet banking services suffer from outages was ‘High’ said that they never use internet banking services. Conversely, 78.3%

of those whose rated level of risk that internet banking services suffer from outages was ‘None’ said that they use internet banking services almost every time.

Table 4.53: Chi-Square Tests of Crosstabulation of Perceived level of risk that internet banking services would suffer from outages and use of internet banking services

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	846.874 ^a	12	.000
Likelihood Ratio	697.238	12	.000
N of Valid Cases	381		

a. 4 cells (20.0%) have expected count less than 5. The minimum expected count is 1.39.

Chi-square tests of the crosstabulation of perceived level of risk that internet banking services would suffer from outages and use of internet banking services in Table 4.53 above show that $\chi^2 = 846.874$, $df = 12$ and the $p = .000$. The $p < 0.05$, so we reject the null hypothesis that presumes that there is no association between perceived level of risk that internet banking services would suffer from outages and use of internet banking services. Clearly, there exists a significant association between perceived level of risk that internet banking services would suffer from outages and use of internet banking services judging from the Cramer’s V of 0.861 in Table 4.54 below.

Performance risk, which describes losses suffered by inadequacies or failures of online banking websites, is a barrier to internet banking adoption. Clients tend to be anxious that a malfunction of system servers or disconnection from the Internet may take place when executing online transactions since these scenarios can result in unforeseen losses (Kuisma et al., 2007).

Table 4.54: Symmetric Measures of Crosstabulation of Perceived level of risk that internet banking services would suffer from outages and use of internet banking services

Symmetric Measures^c		Value	Approximate Significance
Nominal by Nominal	Phi	1.491	.000
	Cramer's V	.861	.000
N of Valid Cases		381	

c. Correlation statistics are available for numeric data only.

4.7 Discussion

This section discusses the findings of the study in reference to the study objectives and the reviewed literature.

4.7.1 Perceived Ease of Use and Utilization of Internet Banking Processes

During self-assessment of computer skills and use of internet banking services it was established in the findings that there exists a highly significant association between computer skills and use internet banking services judging from the Cramer's V of 0.875 gotten from the test conducted. According to literature, self-efficacy is the most significant prerequisite for behavioural change- people can alter their routines in line with their confidence in their capacity to execute that routine, and the routine resulting in a productive outcome (Ezzi, 2014). The respondents who rated their computer skills highly, are thus likely to have self-confidence in their ability to use internet banking, and thus they have higher internet banking adoption rates.

Also we established from the findings that there is no association Customer's Use of Internet and use of internet banking services ($\chi^2 = 28.546$, $df = 16$ and the $p = .027$. The $p > 0.05$). Despite having access to the internet, it is apparent that access does not lend itself to an intention to apply the access as a means of consuming banking services. Other factors such as associated risks and trust must therefore be playing a larger role in

determining how consumers choose to use or not to use internet banking services. Moreover from the findings, we were able to note that there is no association between customer's ownership of smartphone and use of internet banking services. Clearly, there exists no significant association between customer's ownership of and use of internet banking services. Just like access to the internet, it is apparent that smartphone ownership does not lend itself to an intention to apply the device as a means of consuming banking services. In this case – as is with internet access – other factors such as associated risks and trust must therefore be playing a larger role in determining how consumers choose to use or not to use internet banking services.

Clearly, the findings established there is a significant association between customer rating of technical support and use of internet banking services judging from the Cramer's V of 0.787 test conducted. Technical support acts as a means of simplifying the learning curve encountered by potential users, hence easing their transition from conventional banking services to automated processes. It stands to reason, as is apparent from the findings above, that customers who deem the technical support offered by the bank to be insufficient would also find the price of admission to be steep when it comes to internet banking and would as a result fail to adopt internet banking. An app with a hard to understand interface would defeat usability of the app as it would make it hard to use. Perceived ease of use is the degree to which someone believes that employing a certain system would be straightforward and hassle free; to put it differently, ease of use implies liberty from troubles and hassles (Davis, 1989). Therefore, software that is understood to be less complicated to use is generally favoured and used by more people (Durodolu, 2016). Despite the fact that older respondents may exhibit a resistance to adopting new technologies – and younger people's affinity for technology – the effect is perhaps diluted by the elevated education levels in the population as well as the interplay of other variables beyond the perceived ease of use.

4.7.2 Perceived Usefulness and Utilization of Internet Banking Processes

From the study it was established that there exists a significant association between perceived value of internet banking and use of internet banking services judging from the Cramer's V of 0.975 test conducted. Since those that believe that Internet banking is

worthwhile when it comes to time saved in carrying out transactions deem it to be useful, it seen that they are prone to adopting internet banking. Perceived usefulness, as outlined by Davis (1989), is the degree to which an individual is convinced that using a certain technique or method would boost work efficiency or routine responsibility. This notion, he clarifies, is grounded on the thought that the capability obtained will bolster performance. Online banking offers several benefits which offline banking options are not able to give (Huang, Hung & Yen, 2005). These benefits boost the online banking adoption rate. As an example, consumers may take advantage of a broader array of financial benefits, quicker transaction rate, and improved information transparency (Lee, 2008).

4.7.3 Trust and Utilization of Internet Banking Processes

From the study we can be able to say according to the findings that clearly, there exists a significant association between reliance score of internet banking and use of internet banking services judging from the Cramer's V of 0.976 test conducted. Trust, which can arise from aspects such as perceived security and privacy, is a significant element in electronic channels which could have an effect on customers' perceptions toward and intentions to take part in banking and monetary services offered online. Furthermore, insufficient trust continues to be acknowledged as one of the leading hurdles to the embracing and utilization of IB (Kesharwani & Bisht, 2012). This implies trust is required more when clients process more delicate private information such as financial information. Consequently, the establishment of trust and confidence has a significant role when offering financial services.

Trust is a disposition toward automation that influences reliance. People have a tendency to be reliant upon automation that they trust and often cast away automation they do not. By powering reliance, trust aids to defeat the cognitive intricacy people encounter in handling increasingly complex automation. Trust directs - but does not entirely determine - reliance (Lee & See, 2004). The willingness of the people who feel that internet banking is a reliable alternative to conventional banking see it as an alternative that can replace conventional banking underline the fact that people have a tendency to be reliant upon

automation that they trust and often cast away automation they do not (Lee & See, 2004).

4.7.4 Risk and Utilization of Internet Banking Processes

This study was able to bring out clearly from the findings, that there exists a significant association between perceived security offered by internet banking and use of internet banking services judging from the Cramer's V of 0.875 test conducted. Privacy/security risk pertains to a probable loss on account of fraud or a hacker compromising the security of an internet-based bank customer. Both fraud and hacker attack not only result in users' fiscal loss, but also break users' privacy, a serious concern of several Internet users. A lot of customers are convinced they are susceptible to identity theft when using online banking services (Littler & Melanthiou, 2006). This would explain why many of those who rate the security and privacy of internet banking poorly have low adoption rates. The chance of financial loss as a result of transaction mistake or bank account misuse is known as financial risk. As outlined by Kuisma, Laukkanen & Hiltunen (2007), a lot of customers are scared of losing money while carrying out transactions or moving money online. Presently, online banking transactions lack the guarantees offered in a conventional setting by way of formal proceedings and receipts. As a result, customers normally have problems in seeking compensation when transaction mistakes happen (Kuisma et al., 2007). This would explain why many of those who see the perceived likelihood of losing money as being high have low adoption rates.

Also it was indicated that there exists a significant association between perceived likelihood of delays of receiving the payment during a transaction over the internet and use of internet banking services judging from the Cramer's V of 0.857 test done. These results are in line with literature. The loss of time and hassles suffered as a result of delays of getting a payment or the complications associated with navigation is known as Time/convenience risk, and they are a barrier to internet banking adoption. Two primary reasons for dissatisfying online experiences which may be regarded as a time/convenience risk include things like a cluttered or perplexing Web pages and sites which are not quick enough to download (Forsythe & Shi, 2003). It may also be associated with the amount of time linked to waiting for the website or finding out how to use online banking websites (Lee, 2009).

Performance risk, which describes losses suffered by inadequacies or failures of online banking websites, is a barrier to internet banking adoption. Clients tend to be anxious that a malfunction of system servers or disconnection from the Internet may take place when executing online transactions since these scenarios can result in unforeseen losses (Kuisma et al., 2007).

CHAPTER FIVE
SUMMARY, SUMMARY OF THE FINDINGS, CONCLUSION AND
RECOMMENDATIONS

5.1 Introduction

This chapter covers the summary of the findings; it draws conclusions derived from the findings and makes recommendations founded on the conclusions drawn.

5.2 Summary

The first chapter of the study covers the background to the problem, the statement of the problem, the purpose of the study, and the research hypotheses. It also covered the significance of the study, the limitations to the study, the delimitations to the study, the basic assumptions to the study, and the definition of key terms.

The second chapter reviews various studies from around the world that have explored the factors influencing people's utilization of automated processes. The chapter comprises of introduction, relationship between the variables, research gaps, theoretical framework, and conceptual framework.

In the third chapter, the methods that were employed in the study are specified. The research design, target population, sampling population, data collection methods and procedures, data analysis methods and justification, and ethical considerations are outlined, in that order.

The fourth chapter analyses the data in line with the study objectives. The data is presented in tables and charts and interpreted. Chapter five of the study summarises the study and offers a summary of the findings of the study, the conclusions of the study, the recommendations of the study and then offers suggestions for further study.

5.3 Summary of the Findings

5.3.1 Perceived Ease of Use and Utilization of Internet Banking Processes

Tests to verify association between self-assessment of computer skills and use of internet banking services show that there exists a highly significant association between computer skills and use internet banking services. Those who rated themselves highly in terms of their computer skills were also more likely to be users of internet banking services.

Additionally, tests done to check for a relationship between customer's use of internet and use of internet banking services, it was found that there is no association between Customer's Use of Internet and use internet banking services. Similarly, no significant association between customer's ownership of smartphone and use of internet banking services was found.

A large majority of those whose rating of technical support was poor said that they never use internet banking services. On the other hand, a large majority of those whose rating of technical support was excellent said that they use internet banking services almost every time. This shows that customers responded well to enhanced technical support and they increased their use of the services offered online. Chi-square tests revealed that there exists a significant association between customer rating of technical support and use of internet banking services, confirming the relationship.

The study found that almost all of those who said that the app interface was hard to understand said that they never use internet banking services. On the other hand, only a relatively small number of those who said that the app interface was useable said that they never use internet banking services. There exists a significant association between customer rating of app interface and use of internet banking services, a fact that was confirmed through the use of Chi-square tests.

Only a very small minority of those who were 15 to 25 years said that they never use internet banking services. On the other hand, almost a third of those who were 46 and above said that they never use internet banking services. It is clear that there exists a significant association between age of customer and use of internet banking services.

5.3.2 Perceived Usefulness and Utilization of Internet Banking Processes

Almost all of those who strongly disagree that internet banking makes access to transaction information more transparent said that they never use internet banking services. On the other hand, all of those who strongly agree that internet banking makes access to transaction information more transparent said that they use internet banking services every time. There exists a very substantial association between perceived internet banking transparency and use of internet banking services, and statistical tests done on the data attest to this fact.

Also, there exists a significant association between perceived value of internet banking and use of internet banking services. A substantial majority of those who strongly disagree that Internet banking is worthwhile when it comes to time saved in carrying out transactions said that they never use internet banking services. On the other hand, a similarly substantial portion of those who strongly agree that Internet banking is worthwhile when it comes to time saved in carrying out transactions said that they use internet banking services every time.

The study found that only a very small fraction of those who said that Internet banking affords more control over their banking transactions said that they never use internet banking services. On the other hand, a significant majority of those who said that Over-the-Counter Transaction affords more control over their banking transactions said that they almost never use internet banking services. Thus, there exists a significant association between perceived value of internet banking and use of internet banking services, a fact corroborated by chi-square tests done on the data.

5.3.3 Trust and Utilization of Internet Banking Processes

It is seen that a big majority of those who strongly feel that they cannot rely on the phone/computer as a banking agent said that they never use internet banking services. On the other hand, all of those who strongly feel that they can rely on the phone/computer as a banking agent said that they use internet banking services every time. As evident from the tabulated results, chi-square tests show there exists a significant association between reliance score of internet banking and use of internet banking services

Additionally, tests show that there exists a significant association between perceived reliance of transaction information and use of internet banking services. A large majority of those who strongly feel that transaction information provided by the banking app would not be as reliable as the information provided over the counter at the bank said that they never use internet banking services. On the other hand, a large majority of those who strongly agree that transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank said that they use internet banking services every time.

The study shows that almost all of those who strongly disagree that transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank said that they think internet banking should be used to supplement over the counter transactions. On the other hand, almost all of those who strongly agree that transactions information provided by the banking app would be as reliable as the information provided over the counter at the bank said that they think internet banking should be used for all banking transactions. Moreover, statistical measures show there exists a significant association between the perceived reliance score of transaction information and perceived role of internet banking.

5.3.4 Risk and Utilization of Internet Banking Processes

A large majority of those whose rating of the security and privacy offered by internet banking was 'Poor' said that they never use internet banking services. Conversely, large majority of those whose rating of the security and privacy offered by internet banking was 'Excellent' said that they use internet banking services almost every time. There exists a significant association between perceived security offered by internet banking and use of internet banking services.

In addition, statistical tests showed that there exists a significant association between perceived likelihood of losing money during a transaction over the internet and use of internet banking services. A big majority of those who said there is a very good chance for the likelihood of losing money during a transaction over the internet said that they never use internet banking services. Conversely, big majority of those who said there is no chance for the likelihood of losing money during a transaction over the internet said that they use internet banking services almost every time.

A large portion of those who said there is a very good chance for the likelihood of delays in receiving the payment during a transaction over the internet said that they never use internet banking services. On the other hand, a majority of those who said there is no chance for the likelihood of delays in receiving the payment during a transaction over the internet said that they use internet banking services almost every time. There clearly exists a significant association between perceived likelihood of delays in receiving the payment during a

transaction over the internet and use of internet banking services, which was also confirmed through chi-square tests.

A large majority of those who said that there was a high level of risk that internet banking services suffer from outages said that they never use internet banking services. Conversely, a large majority of those who said that there was no risk that internet banking services suffer from outages said that they use internet banking services almost every time. Statistical measures additionally showed that there exists a significant association between perceived level of risk that internet banking services would suffer from outages and use of internet banking services.

5.4 Conclusions

There is a clear link between the perceived ease of use of automated banking and its adoption. For starters, the study found that almost all of those who said that the app interface was hard to understand said that they never use internet banking services. Moreover, those who rated themselves highly in terms of their computer skills were also more likely to be users of internet banking services. This is in line with literature that reveals that computer self-efficacy to be a predictor of people's willingness to adopt automation. Understandably, a large majority of those whose rating of technical support was poor said that they never use internet banking services. This could be an indicator that these people perceive the apps to be hard to use, and that they feel that they do not have a way to break these perceived barriers as they are of the opinion that the bank does little to ease their transition.

Conventional wisdom would suggest that the younger generation would be more adoptive of internet banking, and this is seen in the study where only a very small minority of those who were 15 to 25 years said that they never use internet banking services. On the other hand, almost a third of those who were 46 and above said that they never use internet banking services. This disparity may be reduced through enhanced technical support by the bank targeting the older generations so as to enhance their perceptions of ease of use of the automation processes.

An interesting finding was that there is no association between customer's use of internet and use internet banking services. Similarly, there is no significant association between

customer's ownership of smartphone and use of internet banking services was found. This may mean that there are other mitigating factors that prevent people from adopting internet banking, but smartphone ownership and internet use does not count as a factor for the population targeted.

A perception that internet banking is useful was seen to lead to greater adoption rates. For instance, almost all of those who strongly disagreed that internet banking makes access to transaction information more transparent said that they never use internet banking services. On the other hand, all of those who strongly agree that internet banking makes access to transaction information more transparent said that they use internet banking services every time. This shows that those who adopt internet banking are encouraged to do so since there are clear benefits to using the system. This outcome is also seen when those who deem internet banking to be a worthwhile undertaking in terms of transaction time savings had greater adoption rates for internet banking. Moreover, there were greater rates of adoption among those who thought that Internet Banking afforded more control over their accounts in comparison to Over-the-Counter transactions.

Trust plays a big part in automation, especially in banking where money is at risk. Those who strongly feel that they cannot rely on the phone/computer as a banking agent said that they never use internet banking services. Additionally, those who strongly feel that transaction information provided by the banking app would not be as reliable as the information provided over the counter at the bank said that they never use internet banking services. Further cementing the role of trust in internet banking, those who strongly disagree that transaction information provided by the banking app would be as reliable as the information provided over the counter at the bank said that they think internet banking should be used to supplement over the counter transactions and not as an independent means for carrying out all banking transactions.

Closely related to trust, risks associated with internet banking are seen to be a big hurdle if left unmitigated. A large majority of those whose rating of the security and privacy offered by internet banking was 'Poor' said that they never use internet banking services. In addition, statistical tests showed that there exists a significant association between perceived likelihood of losing money during a transaction over the internet and use of internet banking services. Adoption rates for internet banking were low when the

perceived risks of losing money during a transaction over the internet were higher, and perhaps underlining the importance of mitigating risk in internet banking, a large majority of those who said that there was a high level of risk that internet banking services suffer from outages said that they never use internet banking services.

5.5 Recommendations

To make customers perceive automated banking as being easy to use – a factor that has been proven in this study to be of very significant impact on internet banking adoption – banking institutions need to design customer-centric apps with easy to understand interfaces and follow up with extensive customer education and technical support. Even though an app may be unfamiliar to a potential user, customer education may help the potential user to overcome the initial inertia and thereafter, any worries that the new adopter about usability is mitigated by an easily –accessible user support system.

Moreover, the functionality of the apps needs to be extensive and the banks need to not only rely on user feedback about the functions that need to be baked in at the design stage, but also innovate new ways to serve the customer so as to encourage increased adoption. With customer needs and ways of using automated systems evolving constantly, banks should not sit and wait to play catch-up, but they need to be innovators so as to capture the interest of an increasingly connected world. New capabilities are likely to draw new users as they seek to try new and convenient ways of carrying out transactions.

All this needs to be done without compromising the reliability of the apps since eroded trust is clearly seen to deter customer adoption of automated services. Robust dispute resolution mechanisms should be in place and clear protocols that ensure that customers see the automated systems to be equally trustworthy as their over-the-counter counterparts should be implemented.

Seeing that the risk to the customers also has a profound effect in the participation of the utilization of automated processes, it is important for the stakeholders and the government to formulate laws and policies that mitigate these risks. For instance, the introduction of strict penalties or punishment on people found to hack customers' account could motivate customers to utilize more automated processes like internet banking and

mobile banking. Offering cheaper transaction costs and customer education can encourage customers to uptake the online services offered by banks.

5.6 Suggestions for Further Studies

Additional research is needed to explore the factors influencing customers' utilization of automated processes in commercial banks in Kenya. It is possible that, in addition to results witnessed in the study, a variation in the factors influencing customers' utilization applied in different regions of the country also adds to the impact of the customers on the participation of embracing already introduced automated processes in banking.

More research is needed to find out how literacy levels – as pertains to the perceived ease of use – precisely effects the utilization of automated processes in commercial banks in Kenya. Also, a survey of the available automated services being offered in the market is necessary and a comparison done to try and set a baseline for customer preference as far as usability is concerned.

There is also a need to do market research in a bid to get feedback on the kind of functionality desired by customers in automated services. To innovate new and useful functions, user feedback is pivotal in ensuring that these innovations stay grounded in relevance and customers can continue to view them as being useful.

Trust is a psychological construct, and it is therefore prone to being impacted by cultural aspects. There are currently no local studies exploring the psychological aspects and their relation to automated banking systems. For this reason, additional local studies which explore the psychosocial aspects that guide trustworthiness are necessary to gauge ways to improve the automated services.

To conclude, studies are need that gauge the levels of risks faced by customers as they use automated banking services. This may be achieved by doing an audit on the available automated banking services on offer and exploring the kind of risks that the users are exposed to. If this is done transparently and any risks found mitigated technically and through legislation, the lowered risks would attract more adopters and even bolster trust.

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APPENDICES

APPENDIX I: TRANSMITTAL LETTER

Felix Ndirangu Wambugu,
University of Nairobi,
Department of Open Learning,
P.O. Box 15898,
Nairobi.

3rd June 2018.

Dear Respondent,

RE: DATA COLLECTION

I am a student at the University of Nairobi. I am currently doing a research study on the factors influencing customer's utilization of automated processes in commercial banks in Kenya to fulfil the requirements of the Award of **DEGREE OF MASTER OF ARTS, PROJECT PLANNING AND MANAGEMENT**. You have been selected to participate in this study and I would highly appreciate if you assist me by responding to all questions in the attached questionnaire as completely, correctly, and honestly as possible. Your response will be treated with utmost anonymity and will be used only for research purposes of this study only.

Thank you in advance for your co-operation.

Yours faithfully,

Felix Ndirangu Wambugu

APPENDIX II: QUESTIONNAIRE FOR CUSTOMERS

Instructions

Please place a tick mark (✓) in the box provided next to the answer of your choice or fill in the required information on the spaces provided.

Section A: Respondents' Demographic Information

1. What is your gender? Male Female
2. What is your age? 15 to 25 26 to 35 36 to 45 46 and over
3. Education Level Primary Level Secondary Level College/University Postgraduate
4. What is your place of residence? Rural Rural-Urban Urban
5. Are you fluent in any of Kenya's national languages (Swahili and/or English) Yes No
6. Do you have access to internet? Never Almost never Sometimes Almost every time Every time
7. Do you have a smartphone? Yes No

Section B: Ease of Use

8. How do you rate your computer use skills? Poor Average Above Average Excellent
 9. How often do you use the Internet?
 Never Rarely sometimes Most times All the time
 10. How often do you use personal banking services?
 Never Rarely sometimes Most times All the time
 11. Do you use Internet banking? Never Almost never Sometimes Almost every time Every time
 12. How do you rate the level of internet banking technical support provided by the bank?
 Poor Average Above Average Excellent
 13. How can you describe the user interface of the app that the bank provides Hard to Understand Useable
Please indicate your main reason for you answer above
-

14. How did you first know about Internet Banking?

A bank representative Referral from a friend An Advert Website

Other (Specify) _____

Section C: Perceived Usefulness

15. Do you think that internet banking makes access to transaction information more transparent?

Strongly Disagree Disagree Neutral Agree Strongly Agree

Please provide the basis for your answer

16. Would you say that, despite the associated internet access costs, Internet banking is worthwhile when it comes to time saved in carrying out transactions?

Strongly Disagree Disagree Neutral Agree Strongly Agree

Please provide the basis for your answer

17. In your opinion, what gives you more control over your banking transactions?

Internet Banking Over-the-counter transaction

Section D: Trust

18. Do you feel that you can rely on your phone/computer as a banking agent?

Strongly Disagree Disagree Neutral Agree Strongly Agree

19. Do you think that the transaction information provided by your banking app would be as reliable as the information provided over the counter at the bank?

Strongly Disagree Disagree Neutral Agree Strongly Agree

20. How do you think internet banking should be used?

To Supplement Over-the-counter transactions For all banking transactions

Please provide the basis for your answer

Section E: Risk

21. In your estimation, how would you rate the security and privacy offered by internet banking?

Poor Average Above Average Excellent

22. In your estimation, what is the likelihood of losing money during a transaction over the

internet?

Very Good Chance Some Chance Very Little Chance No Chance

23. What do you feel to be the likelihood of delays of receiving the payment during a transaction over the internet?

Very Good Chance Some Chance Very Little Chance No Chance

24. In your opinion, what is the level of risk that internet banking services suffer from outages?

High Moderate Low None

APPENDIX III: QUESTIONNAIRE FOR EMPLOYEE

Instructions

Please place a tick mark (√) in the box provided next to the answer of your choice or fill in the required information on the spaces provided.

Section A: Respondents' Demographic Information

- 1. What is your gender? []Male []Female
- 2. What is your age? []15 to 25 [] 26 -35 []36 -45 []46 and over
- 3. How long have you worked with Equity Bank?

Section B: Product Familiarity

- 4. Have you ever received any training about the bank's internet banking service? []No []Yes
- 5. In your opinion, how would you rate your skill level for handling customer complaints regarding the bank's internet banking offerings? [] High [] Moderate [] Low [] None
- 6. In your own words, what would you give as a reason preventing over-the-counter customers from adopting the bank's internet banking service?

- 7. In your opinion, do you think that the bank's internet banking service fulfils all the needs of the customer as compared to over-the-counter service? []No []Yes

Please provide the basis for your answer

APPENDIX IV: KREJCIE AND MORGAN FORMULA TABLE

Population Size	Probability of Success	Confidence = 95.0% 3.841 459				Confidence = 99.0% 6.6348 97			
		Degree of Accuracy/Margin of Error				Degree of Accuracy/Margin of Error			
		0.05	0.035	0.025	0.01	0.05	0.035	0.025	0.01
10		10	10	10	10	10	10	10	10
20		19	20	20	20	19	20	20	20
30		28	29	29	30	29	29	30	30
50		44	47	48	50	47	48	49	50
75		63	69	72	74	67	71	73	75
100		80	89	94	99	87	93	96	99
150		108	126	137	148	122	135	142	149
200		132	160	177	196	154	174	186	198
250		152	190	215	244	182	211	229	246
300		169	217	251	291	207	246	270	295
400		196	265	318	384	250	309	348	391
500		217	306	377	475	285	365	421	485
600		234	340	432	565	315	416	490	579
700		248	370	481	653	341	462	554	672
800		260	396	526	739	363	503	615	763
900		269	419	568	823	382	541	672	854
1,000		278	440	606	906	399	575	727	943
1,200		291	474	674	1067	427	636	827	1119
1,500		306	515	759	1297	460	712	959	1376
2,000		322	563	869	1655	498	808	114	1785
2,500		333	597	952	1984	524	879	128	2173
3,500		346	641	1068	2565	558	977	151	2890
5,000		357	678	1176	3288	586	1066	173	3842
7,500		365	710	1275	4211	610	1147	196	5165
10,000		370	727	1332	4899	622	1193	209	6239
25,000		378	760	1448	6939	646	1285	239	9972
50,000		381	772	1491	8056	655	1318	252	12455
75,000		382	776	1506	8514	658	1330	256	13583
100,000		383	778	1513	8762	659	1336	258	14227
250,000		384	782	1527	9248	662	1347	262	15555
500,000		384	783	1532	9423	663	1350	264	16055
1,000,000		384	783	1534	9512	663	1352	264	16317
2,500,000		384	784	1536	9567	663	1353	265	16478

10,000,000	384	784	1536	9594	663	1354	265	3	16560
100,000,000	384	784	1537	9603	663	1354	265	4	16584
264,000,000	384	784	1537	9603	663	1354	265	4	16586

The recommended sample size for a given population size, level of confidence, and margin of error appears in the body of the table.

For example, the recommended sample size for a population of 1,000, a confidence level of 99%, and a margin of error (degree of accuracy) of 3.5% would be 575.