INFLUENCE OF ICT COMPETENCE AMONG BANK STAFF ON ADOPTION OF E-BANKING: A CASE OF KCB LTD, NAIROBI COUNTY KENYA

BY

ANNE MUSSAH WABUTI

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DECLARATION

This research project is my original work and has not been presented for any award of a degree in any other university of institution of higher learning for examination.

…… ……

ANNE MUSSAH WABUTI DATE

L50/70421/2011

This research project has been submitted for examination with my approval as the University Supervisor.

…….. ……

DR. NICHOLUS KUT OCHOGO DATE

LECTURER, DEPT OF EXTRA MURAL STUDIES

UNIVERSITY OF NAIROBI

DEDICATION

This work is dedicated to the almighty God for the strength he has given me during my work period on this project.

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LIST OF ABBREVIATIONS AND ACRONYMS

ATM Automated Teller Machine

CBK Central Bank of Kenya

CTS Cheque Truncation System

ICT Information Communication Technology

KCB Kenya Commercial Bank

PIN Personal Identification Number

POS Point Of Sales

TAM Technology Acceptance Model

TRA Theory Reason Action

ABSTRACT

The new millennium brought with it new possibilities in terms of information access and availability simultaneously, introducing new challenges in protecting sensitive information from some eyes while making it available to others. In Africa e-banking began in South Africa and spread to other African countries including Kenya. The adoption of ICT improves the banks' image and leads to a wider, faster and more efficient market. It has also made work easier and more interesting, improved the competitive edge of banks, improved relationship with customers and assisted in solving basic operational and planning problems. The integration of e-banking is inevitable, especially for institutions that wish to remain relevant in the era of technology. This study sought to assess the influence of ICT competence among bank staff on adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya. This research problem was studied through the use of a descriptive survey research design. The population of the study was 200 employees at Kimathi and Moi Avenue Branches. Out of the total population of 200 employees of KCB at Moi Avenue and Kimathi Branches, a sample size of 132 was taken. Questionnaires were administered to the respondent through drop and pick method. The study carried out a pilot study to pretest and validates the questionnaire. In this study, a descriptive approach to data analysis was used to analyze data collected on the influence of ICT competence among bank staff on adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya. The Quantitative data collected was analyzed using SPSS and presented through percentages, means, standard deviations and frequencies. The study established that competence in ICT has positive influence on the adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya. The study established that positive attitude amongst employees is crucial for successful adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya. The study established that the focus of knowledge management is connecting people, processes and technology for the purpose of leveraging corporate knowledge. The study established that local commercial banks should invest heavily in mobile banking in order to increase customer enrollment and awareness.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The new millennium brought with it new possibilities in terms of information access and availability simultaneously, introducing new challenges in protecting sensitive information from some eyes while making it available to others, (Abbadmoris and Nahlik, 2009). Today's business environment is extremely dynamic and experience rapid changes as a result of technological improvement, increased awareness and demands Banks to serve their customers electronically. Banks have traditionally been in the forefront of harnessing technology to improve their products and services. While the world is becoming more technical, the people are becoming more mobile, (Kao, 2008). Today's people travel more and longer distances than ever. People's work situations are more changeable than they used to be and we seem to be on our way at all times. People are on the move both at work and otherwise. At most workplaces people face situations in which they must be mobile in carrying out their ordinary tasks (Kristofferson & Ljungberg, 1999). This increased mobility among people in our information society increases the need of being able to access things independent of location (Dahlbom & Ljungberg, 1999). Among these things is banking services.

The Banking industry of the 21st century operates in a complex and competitive environment characterized by these changing conditions and highly unpredictable economic climate. Information and Communication Technology (ICT) is at the centre of this global change curve of Electronic Banking System today. (Stevens 2002). Assert that they have over the time, been using electronic and telecommunication networks for delivering a wide range of value added products and services, managers in Banking industry in Kenya cannot ignore Information Systems because they play a critical impact in current Banking system, they point out that the entire cash flow of most fortune Banks are linked to Information System. The application of information and communication technology concepts, techniques, policies and implementation strategies to banking services has become a subject of fundamental importance and concerns to all Banks and indeed a prerequisite for local and global

competitiveness Banking. The advancement in Technology has played an important role in improving service delivery standards in the Banking industry. In its simplest form, Automated Teller Machines (ATMs) and deposit machines now allow consumers carry out banking transactions beyond banking hours.

E-banking is a relatively new form of banking which involves the delivery of various modes of banking through the internet. E-banking is growing rapidly in terms of payments by ATM, collection of money through cash registers, use of electronic card device etc as a result of the advancement of ICT. It is founded on computer mediated communication whose primary mode of delivery is the internet. In this regard, e-banking is any form of banking that is web-based or internet enabled. Banking over the internet is considered a significant breakthrough in the communications in the banking industry (Keller &Kernernd, 2002). Faharani (203) asserts that e-banking is the use of internet technology to deliver banking services. This can be done through the use of videos and training materials from anywhere with internet access. The use of online chat and quick service cards in contact with customers or among themselves. Clients are also exposed to modes of technology including multi-media machines, software package and the internet (Kerka, 2002).

In Africa e-banking began in South Africa and spread to other African countries including Kenya. As in many markets, internet banking started fairly slowly in South Africa, but after growing between 20- to 30% a year over and in five years, it gained solid momentum and is became firmly established as a very important channel for bank customers, who estimated the total number of online bankers in South Africa at between two and 2.5 million.In 2007 in South Africa, Standard Bank has over 600 000 customers using its internet banking facilities to conduct various business and private banking transactions. (Simone Green & Jean-Paul Van Belle 2002; Standard Bank Press release 2007). Following excellent penetration of its e-banking offering in South Africa, Standard Bank is introduced e-banking to five other African countries by the end of the year 2007. These countries were Kenya, Uganda, Tanzania, Malawi and Zimbabwe.

1.2 Statement of the problem

New age business environment is very dynamic and undergoes rapid changes as a result of technological innovation, increased awareness and demands from customers. Business organizations, especially the banking industry of the 21st century operates in a complex and competitive environment characterized by these changing conditions and highly unpredictable economic climate (Alowade & Kaka, 2002). The adoption of ICT in banks has improved customer services, facilitated accurate records, provided for Home and Office banking services, ensured convenient business hour, prompted fair attention, and enhanced faster customer services. The adoption of ICT improves the banks' image and leads to a wider, faster and more efficient market. It has also made work easier and more interesting, improved the competitive edge of banks, improved relationship with customers and assisted in solving basic operational and planning problems.

The integration of e-banking is inevitable, especially for institutions that wish to remain relevant in the era of technology (Dunn, 2000). However, the competence of staff and their willingness to adopt internet banking is still an issue that slows down the progress. Implementation of internet banking services requires competent human resources. The personnel in banks who are responsible in maintenance of internet banking systems are fair. This shows that an improvement in the recruitment of personnel was of paramount importance (Wahome, 2013). This is an issue that remains inadequately addressed. For instance, are all staff fully competent in using e-banking: How do they perceive their competence in use of e-banking vis-à-vis their willingness to adopt e-banking? To what extent do they view e-banking as a threat to their jobs: What are the support needs of the bank staff in regard to e-banking? These are the key concerns that the study sought to address.

1.3 Purpose of the study

This study sought to assess the influence of ICT competence among bank staff on adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya

1.4 Objectives of the study

The study was guided by the following objectives:

i. To assess the extent to which competence in ICT influences adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya
ii. To assess the influence of technical staff on adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya
iii. To assess the extent to which knowledge of ICT packages influences adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya
iv. To assess the extent to which budgetary allocation influence adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya

1.5 Research Questions

The study endeavored to answer the following questions:

i. To what extent does competence in ICT influences adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya?
ii. How does technical staff influence the adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya?
iii. To what extent does knowledge of ICT packages influences adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya?
iv. To what extent does budgetary allocation influence adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya?

1.6 Significance of the study

The finding of this study will hopefully be of great significance to management of Commercial banks in Kenya as they will be enlightened on the influence of ICT competence

among bank staff on adoption of e-banking in the banking sector. By assessing the staff competence in using ICT software tools vis-a-vis the preparedness to adopt e-banking the output of this study will highlight skill gaps, ease of banking and investment enhancement.

The findings of this study are also expected to be of great importance to policymakers in the banking industry as they will enlighten them on influence of ICT competence among bank staff on adoption of e-banking in Kenya. This will help them in designing policies that will guide the adoption of e-banking in Kenya. The information obtained from the study will justify the need for appropriate interventions that would improve e-banking preparedness.

The findings of this study will also hopefully be of great importance to future scholars and academicians and future scholars as the study will form the basis for future research and provide literature review for future research. Further the information will improve existing literature on the adoption of e-banking in the developing countries, making the output a valuable resource material for e-banking consumers worldwide.

1.7 Limitations of the study

The primary limitation of the proposed research is that it depends on the co-operation and honesty of the respondents, which in turn, may affect the return rate. To ensure optimum co-operation and honesty in the process, the investigator explained importance of the study, the need for honesty and the policy that guarantees confidentiality. Co-operation was improved by involving key administrative office in follow up activities. The research was limited by the fact that was relied on self-assessment of the bank staff competence in using ICT software tools. Such data is likely to suffer from subjective bias. The participants were

requested to indicate their most sincere opinion on their ICT capability. The analysis used the mean score for all reported scores per software tool.

1.8 Delimitation of the study

The scope of the study is delimited by the fact that the researcher relied on personal resources to finance the process. In addition, the study was delimited to staff at Kimathi and Moi Avenue branches because of their strategic location and constant interaction with customers who are bound to benefit most from e-banking.

1.9 Assumption of the study

The management of the institution allowed the researcher to access the staff to fill the questionnaires. It also assumed that that staff cooperated in this exercise

1.10 Definition of significant terms

Budgetary allocation; this refers to amount of money allocated to electronic banking in the organization (Venkatesh *et al.*, 2003).

E-banking: All forms of banking activities that are web-based and mostly do not require the physical presence of the customer in the bank.

ICT competence: Banks staff perceived capability to work well with ICT software tools. On a scale of 0-10, bank staff will rate their capability for each software tool. Analysis will be based on the mean score for all software tools.

ICT software: Include basic tools for word processing, spreadsheet, presentation,

ICT: Refers to electronic equipment and programs used for communication or to facilitate e banking.

Internet: A collection of linked computer around the world.

Preparedness to Adopt: Bank staff perceived readiness to adopt e-banking. On a scale of 0-10, staff will be asked to rate their readiness to adopt e-banking Based on their competence in using the software tools.

Technical staff ; this refers to staff involved in repair and advice service that some companies such as computer companies provide for their customers, (Rao *et al.*, 2003).

Tools: statistical analysis, internet browsing and e-mailing. Competence will be gauged as the mean score.

1.11 Organization of the Study

This project has been organized into three chapters. Chapter one provides the background of the study, research problem, purpose of the study, objectives of the study, research questions, hypotheses of the study and justification of the study, limitations and delimitations of the study and definition of significant terms. Chapter two presents a review of literature on preparedness to adopt e-banking. Also reviewed, is the theoretical literature on the integration of technology in banking. The third chapter covers the methodology that will be applied in the study and includes sections on research design, target population, sample size and sampling procedures; research instruments, validity and reliability issues, as well as data collection and analysis procedures. Chapter four is an analysis, interpretation and presentation of date whereas the final chapter is a summary of findings, discussions, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter mainly highlights what other previous researchers have written on influence of ICT competence among bank staff on adoption of e-banking in Kenya. The section is organized into introduction, the body and the summary of the chapter.

2.2 Concept of e-Banking

Internet Banking means communication with the Bank and/or performance of transactions through the international network, thus allowing the client to perform transactions in relation to the bank and to obtain other information in the scope shown at the website of the bank. "Internet Banking" can also be defined as "systems that enable bank customers to access accounts and general information on bank products and services through a PC or other intelligent device " or "any banking activity held on Internet (from promotion to sale)" (Mathias & Sahut, 1999). Adoption means the process of accepting the initiation, implementation and use of a particular technological innovation, especially those that are regarded as new in an organization.

Internet is a decentralized information distribution network accessible by computer and has no central authority through which information must pass. It operates through independently functioning computer systems that are connected by communicating in a common protocol or language (Kilonzo, 2007). With the emergence of the Internet, two stages in the development

of electronic commerce were identified: the traditional and the modern stage. In the traditional stage, the networks were means for moving data, in the modern stage; the networks (and internet being their synthesis) are the market (De Freitus, 2000). Although the financial service industry was the first to recognize the potential of internet as a means of interacting with customers, (Khan, 2007) data compiled by Web Marketing Association shows that banks are trailing behind other industries in innovations within internet channel (Bruno-Britz, 2006).

In today's fast moving business, customers need faster and more secure services for their financial transactions. Commercial banks in Kenya have the privilege of various delivery channels for their products and services. This includes the brick and mortar branch office networks, automated teller machines (ATM's), tele-banking or mobile banking via the telecommunication channel and Internet banking (Market Intelligence, 2003).

The concept of internet banking has been simultaneously evolving with the development of the World Wide Web. Programmers came up with these ideas sometime during the 1980s. This is the time when online shopping promoted use of credit card through internet. Many banking organizations had already started creating data warehousing facilities to ease their working staff and the development of these databases was also widely used during the development of ATMs. Sometime in 1980s, banking and finance organizations in Europe and United States started researches and programming experiments on the concept of 'home banking'. At this point, home banking basically made use of fax machines and telephones since computers and internet were not so well developed (Scholasticus, 2000).

In Africa, Nigeria has witnessed an upsurge of electronic payment instruments meant to facilitate trade and simplify payments, (Abor, 2004). Before the introduction of electronic payment into the Nigerian banking system, all customers had to walk into the actual bank to do transaction of all kinds. Customers had to queue up and spend more hours to talk to a teller to make their transactions, (Abor, 2004). The inconveniences caused by these long queues can discourage someone to make payment. For many years, bankers, technology specialists, entrepreneurs, and others have advocated for the replacement of physical cash and the introduction of more flexible, efficient and cost-effective retail payment solutions. Countless conferences and seminars have been held to discuss the concepts of cashless and "chequeless" society, (Bank for International Settlement, 1998).

In Kenya, interest in Internet banking is particularly keen since a strong case can be made that banking, along with other financial services; provide a particularly fertile environment for the development of electronic commerce. At its core, banking involves the collection, storage, transfer and processing of information on money and the Internet is an incredibly powerful and efficient tool for handling these information processes. The Internet has enabled customers to access information reporting through the web. Using their own customized selection criteria, customers can retrieve information easily and reliably, including intra-day, real-time status of their accounts.

Traditional branch-based retail banking remains the most widespread method for conducting banking transactions in Kenya. However, Internet technology is rapidly changing the way personal financial services are being designed and delivered. For several years, commercial

banks in Kenya have tried to introduce Internet-based electronic banking systems to improve their operations and to reduce costs.

Technological developments particularly in the area of Telecommunications and Information Technology are revolutionizing the way business is done. Electronic commerce (e-commerce) is the activity in which consumers get information and purchase products using Internet technology (Olson and Olson 2000). E-commerce is now thought to hold the promise of a new commercial revolution by offering an inexpensive and direct way to exchange information and to sell or buy products and services. This revolution in the market place has set in motion a revolution in the banking sector for the provision of a payment system that is compatible with the demands of the electronic marketplace. Consequently, the potential benefits of e-commerce have been widely touted (e.g. Gefen et al.2003).

However, while recognizing that Internet technology has been there for some time now, it needs to be acknowledged that its uptake been disappointingly low and well below expectations, in all developing countries except Korea (Firth and Kelly, 2001; Houghton and Morris, 2001; Zhang, 2002). The electronic revolution in banking basically centers on changes in the distribution channels of financial institutions. The presence of computer and information technologies in today's banks has expanded dramatically. Some estimates indicate that, since the 1980s, about 50 percent of all new capital investment in organizations has been in information technology (Westland and Clark 2000). Yet, for technologies to improve productivity, they must be accepted and used by employees in those organizations.

2.2.1 Influence of competence in ICT on adoption of e-banking

Branchless banking is a distribution channel strategy used for delivering financial services without relying on bank branches. While the strategy may complement an existing bank branch network for giving customers a broader range of channels through which they can access financial services, branchless banking can also be used as a separate channel strategy that entirely forgoes bank branches. ATMs allow account holders to do various transactions on their accounts without going into a bank branch. It performs the roles of a bank teller such as balance enquiry, mini statements printout, cash withdrawal, cash & cheque deposits and internal funds transfers. The transactions are carried out by use of a card and PIN. In some countries like Nigeria, biometric details e.g fingerprints are used as opposed to PIN.

Mobile banking is the use of mobile phones to conduct financial transactions. Mobile banking has surpassed ATM usage (CBK Report, 2008). There are about 8million users of m-banking services. The tremendous increase in the number of users is attributed to the ease of use and by number of mobile phone owners. This lies in consistency with the theory of consumer choice & demand as conceptualized (AU & Kauffman, 2008). M-banking enables customers to view their balances, transfer money, check mini-statement, purchase airtime, and pay utility bills and to receive sms alerts whenever transactions have occurred in their accounts.

Real time gross settlement systems (RTGS) are funds transfer systems where transfer of money or securities takes place from one bank to another on a "real time" and on "gross" basis. Settlement in "real time" means payment transaction is not subjected to any waiting period. The transactions are settled as soon as they are processed. "Gross settlement" means

the transaction is settled on one to one basis without bunching or netting with any other transaction. Once processed, payments are final and irrevocable. Since January 2012, all commercial banks in Kenya officially implemented the Cheque Truncation System (CTS), a new electronic cheque clearing system that reduced the number of days it takes for bank cheques to clear to 2 days from 4 days, leading to advantages for individuals and businesses.

"The exchange of electronic cheque images is faster than was the case for physical cheques hence the benefit of shorter clearing period. This benefit has been well received by the bank customers", said Emmy Kiptugen who is a member of the Operations & Technical Committee at the Kenya Bankers Association. Before cheque truncation was implemented last year, cheques submitted at commercial banks would need to be physically compiled and sent to the central clearing house leading to the 4 day waiting period (Ian, 2012) Internet banking allows account holders to access their accounts from anywhere using their PCs. The user is set up using their PIN & phone number, to maximize security. Internet banking allows the account holder to access account information and transactions. They can also do funds transfer, view, download and print statement, view exchange rates, pay loans, request & stop cheques.

2.2.2 Influence of Technical Staff on adoption of e-banking

According to Spacey et al., (2003), attitudes are found to be fundamental in the acceptance, implementation and success of new technologies. For ICT systems to be successful, it is suggested that staff need positive attitudes to ICT (Fine, 1986; Evald, 1996). Attitudes have been suggested to influence behaviour. Social psychologists, Fishbein and Ajzen (1975) submitted in the theory of Reasoned Action (TRA) that an individual's behaviour is

determined by one's intention to perform the behaviour, and that this intention is influenced jointly by an individual's attitude and subjective norm (the latter is a measure of how people are influenced by their peer's opinions).

Applying this understanding to an individual's acceptance of management information systems, the Technology Acceptance Model (TAM) (Davis, 1989) suggested attitude influences behavioural intention to use, and subsequent actual use. TAM also includes the constructs of perceived usefulness and perceived ease of use. Perceived usefulness is the extent to which a person believes that using a system (or computer programme, for example) will enhance their performance, whilst perceived ease of use is the extent to which a person believes that use of the system will be free from effort. These two constructs have an important impact on a person‟s attitude toward using the system but, unlike the TRA, Davis found that attitude did not completely mediate between beliefs and intentions (Mathieson, 1991). This suggests that an individual could hold negative attitudes to a system, but would still use it because it has high - perceived usefulness (Dillon and Morris, 1996)

2.2.3 Influence of knowledge of ICT packages on adoption of e-banking

KCB uses internet that is a global system of interconnected computer networks that use the standard Internet protocol suite (*TCP/IP*) to serve millions of users worldwide. The Internet carries an extensive range of information resources and services, the KCB internet connects the bank to its stakeholders who are outside the organization e.g customers, suppliers, shareholders and researchers.

Temenos is the core banking software that is used in creation of accounts, maintenance of customer database, conducting of all transactions on customer accounts and production of

reports. It is a live online system that is interlinked with the ATM, the VISA cards, the mobile banking, and internet banking. Prime is the system for processing of credit and card payments . It links the bank to all outlets that have Visa or Mastercard allowing cardholders to carry their money in plastic form, make payments and withdrawals online, at points of sale and at ATM machines. There are over 20,000 Visa outlets worldwide. Sybrin is software is used in the Cheque Truncation System of clearing cheque. It enables banks to remit cheque electronically to an automated clearing house. It enables real-time debiting of the drawers account and gives value in 2 days after deposit. In the past, cheques were given value after 4 days.

Intranet is the generic term for a collection of private computer networks within an organization. An intranet uses network technologies as a tool to facilitate communication between people or work groups to improve the data sharing capability and overall knowledge base of an organization's employees. Kenya Commercial Bank's intranet typically includes Internet access but is firewalled so that its computers cannot be reached directly from the outside. It consists of an internal email system, a message board service, Web sites and databases containing company news, forms, and personnel information, e-mail system, internal documents.

This is ATM software that interlinks over 200 ATM machines of the bank. It enable customers to access their accounts from anywhere that there is a KCB ATM machine, enabling them to view their balances, withdraw cash, check mini-statements, transfer funds and deposit cash. In addition, the bank has partnered with Kenswitch, Pesapoint and VISA to

enable customer's access their accounts from other machines wherever these brands are accepted.

2.2.4 Influence of budgetary allocation on adoption of e-banking

Financial industry is a heart of every robust economy, if it collapses so will the economy and it is absolutely evident from recent recession in UK, and in turn, Information Technology has become the heart of banking sector. Investment and reliance in e-banking innovation by its providers to offer their services makes it essential to understand how various aspects of consumer behaviour affect the innovation and respond to service quality. To further this, increased adoption of internet as a delivery channel contributes a gradual reduction in overhead expenses (Marketing, IT and Staff).

Local commercial banks, KCB included, are investing heavily in mobile banking in order to increase customer enrollment and awareness. This is in terms of advertising, enrollment of specific staff and investment in IT systems that support the service fully. According to the Business Daily (12March, 2013) Kenyan banks are betting on cost controls and increased mobile and agency banking to grow net earnings this year, marking a shift from dependence on an aggressive expansion model that fuelled profit growth over the past five years.

2.3 Theoretical Framework

This section illustrates the theoretical basis to assess the influence of ICT competence among bank staff on adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya. The study is based on the technology acceptance model which explains the adoption of e-banking among commercial bank in Kenya.

2.3.1 Technology adoption models

To assess the adoption scenario of IT application in the market, such as internet banking, a lot of previous studies and research have carried out and various frameworks were proposed to identify the factors or determinants influencing the acceptance of technology in the consumer context. Since online banking is a type of technological innovation (Lin and Lee, 2005), existing studies on innovation adoption could be used in the study of online banking. One of the most common models used by researchers in the study of individual's adoption of technology is Technology Acceptance Model (TAM) (Davis, 1989). TAM proposed that both the perceived usefulness and perceived ease of use can be used to predict the attitude towards using new technology, which in turn affects the behavioral intention to use the actual system directly (Venkatesh *et al.*, 2003).

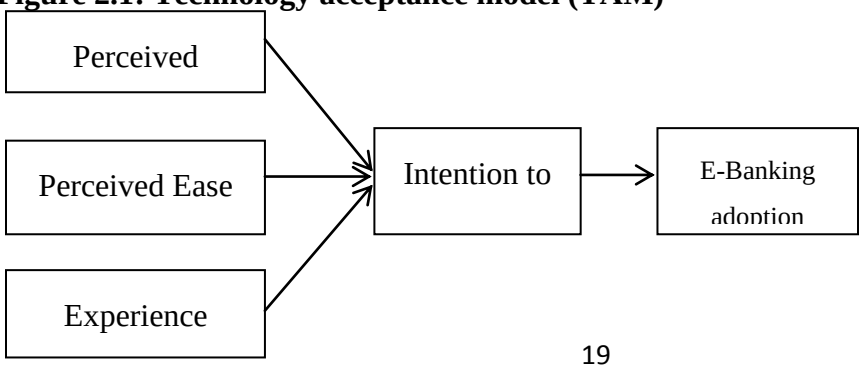
Perceived usefulness is defined by Davis as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989). Thus for users of online banking, they will adopt the system if they believe the system will bring benefits such as reducing time spent on going to bank and improving efficiency (Rao *et al.*, 2003).

According to TAM, perceived ease of use is "the degree to which the prospective adopter expects the new technology adopted to be a free effort regarding its transfer and utilization" (Davis, 1989). Therefore if users feel that online banking is easy to use and free of hustle, then the chances of them to use the system will be greater. Jeyaraj *et al.* (2006) conducted a comprehensive review of predictors of technology adoptions by organizations and individuals that were published between 1992 and 2003 and found that TAM is one of the

most widely used technology adoption model. Although TAM was first introduced in 1989, it is still being widely used as shown in Jeyaraj *et al.* (2006). However, many research state that TAM itself is insufficient to explain users' decisions to adopt technologies, therefore they use TAM as a base model and extended the model by adding additional variables to the model depending on the types of technologies they studied. Kamarulzaman (2007) on his study of internet shopping adoption drew upon TAM and included personal and cognitive influence. Amin (2007) also modified the original TAM by including perceived credibility and the amount of information on mobile credit card were added to his study of mobile credit card usage intentions. Various extensions to the TAM were also conducted in the study of online banking such as those conducted by Pikkarainen *et al.* (2004) also used TAM as a base and included various factors such as security and privacy, enjoyment and amount of information.

Other researchers have also tried to combine TAM with other technology adoption models. Hernandez and Mazzon (2007) applied TAM with other technology adoption models such as Innovation Diffusion Model and TAM2, which is an extension of TAM in their study on online banking implementation in Brazil. Gounaris and Koritos (2008) applied Perceived Characteristics of the Innovation (PCI) model in their online baking adoption study. However, the model is a combination of TAM with another model known as Innovation Diffusion Model which looks at a technology's characteristics in the study of technology adoption.

Figure 2.1: Technology acceptance model (TAM)



2.4 Conceptual Framework

A conceptual framework is a research tool intended to assist a researcher to develop awareness and understanding of the situation under scrutiny and to communicate this. The theoretical and empirical literature highlight an array of variables, which may be categorized into five main concepts namely: access to ICT, competence in ICT, technical staff, adequate budgetary allocation, socio cultural factors, banking regulations, and preparedness to adopt e-banking. The researcher proposed the framework presented as figure2.1 to show the linkage between key concepts of the study.

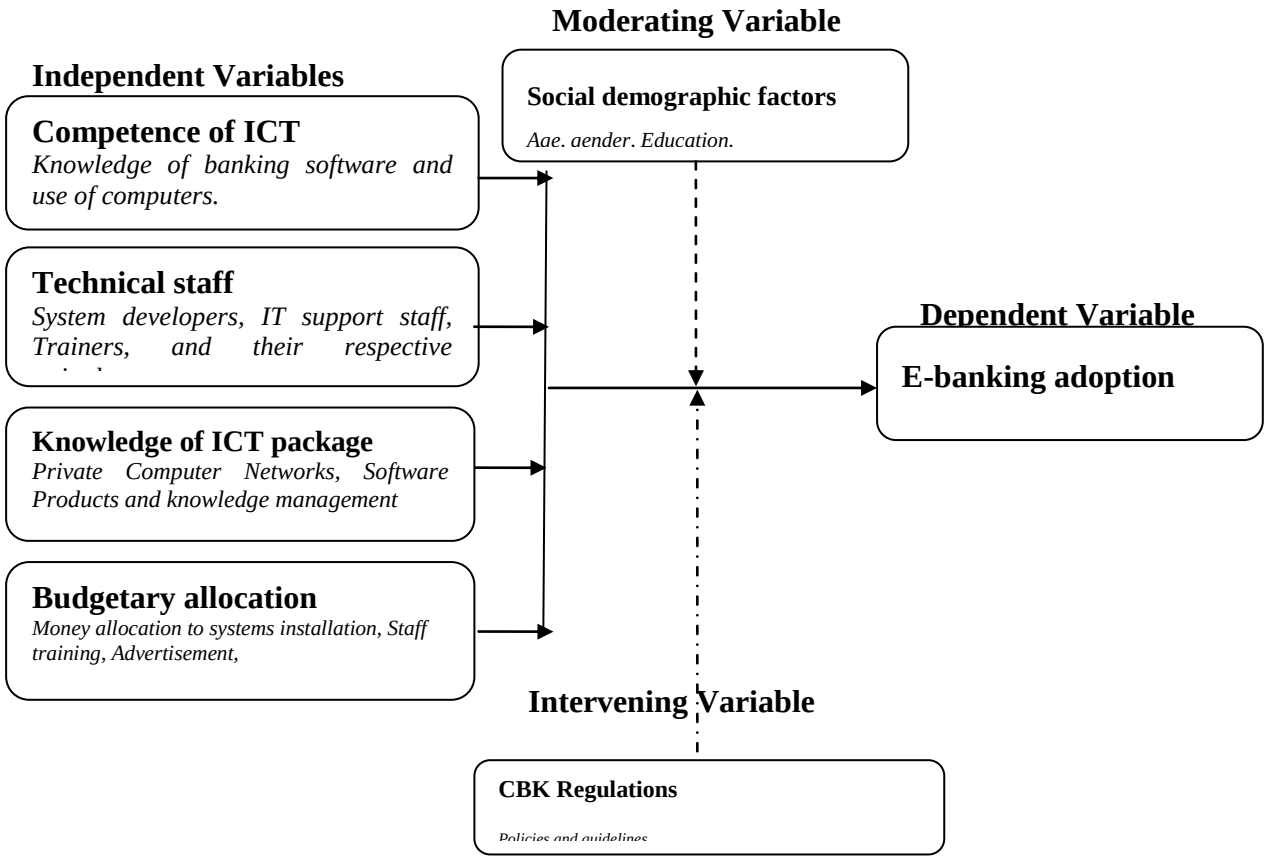


Figure 2.2: Influence of ICT Competence among Bank Staff on Adoption of E-Banking in Kenya Commercial Bank

Source: Researcher, 2014

Figure 2.3: Operational definition of Variables

Objective	Variable	Indicators	Scales	Data collection tool	Type of Analysis
To assess the extent to which competence in ICT influences adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya	**Independent variable** Competence of ICT	• Number Of Users • Number Of Transaction • Access to account information • Knowledge of banking softwares and use of computers.	Ordinal	Questionnaire	Descriptive
To assess the influence of technical staff on adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya	**Independent variable** technical staff	• ICT systems • Individual's attitude • Individual subjective norm	Ordinal	Questionnaire	Descriptive
To assess the extent to which knowledge of ICT packages influences adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya	**Independent variable** knowledge of ICT packages	• Private Computer Networks • Software Products • knowledge management	Ordinal	Questionnaire	Descriptive
To assess the extent to which budgetary allocation influence adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya	**Independent variable** budgetary allocation	• Budgetary approval • Money allocation	Ordinal	Questionnaire	Descriptive
adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya	**Dependent variable** E-banking adoption	• Use of e-banking • Integration into normal banking	Ordinal	Questionnaire	Descriptive

Source, Author (2014)

2.5 Summary and Research Gap

The reviewed literature demonstrates influence of ICT competence among bank staff on adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya. The review has viewed the studies in 5 different aspects being, competence in ICT, influence of technical staff, knowledge of ICT packages, budgetary allocation and socio-demographic factors. The studies quoted were conducted in foreign countries. Hence, there is a need to conduct a local study (in Kenya) to assess the influence of ICT competence among bank staff on adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter described the intended research design for the study, the target population for the study, the sampling procedure to be used in conducting the study, methods of data collection, instrumentation issues with regard to validity and reliability, operational definition of variables, method of data analysis to be used in conducting the research and finally the summary of the chapter.

3.2 Research design

Research design is the basic plan that indicates an overview of the activities that are necessary to execute the research project. This research problem will be studied through the use of a descriptive survey research design. According to Cooper and Schindler (2003), a descriptive study is concerned with finding out the what, where and how of a phenomenon. This study therefore was able to generalize the findings to all the banks. This method concerns the intense investigation of problem solving situations in which problems are relevant to the research problem.

The research project focused on the influence of ICT competence among bank staff on adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya. The underlining concept was to select several targeted cases where an intensive analysis identifies the possible alternatives for solving the research questions on the basis of the existing solution

applied in the selected case study. The study attempted to describe and define a subject, often by creating a profile of group of problems (Cooper & Schindler, 2003).

3.3 Target Population

According to Ngechu (2004) a study population is a well-defined or specified set of people, group of things, households, firms, services, elements or events which are being investigated. The population of the study was Kenya commercial banks employees at the Kimathi and Moi Avenue Braches. The bank's branch has 200 employees who formed the target population for this study. A sample was drawn from the targeted 200 employees at Kimathi and Moi Avenue Branches.

Table 3.1: Target Population

Department	Population	Percent
Top Management	17	8.5
Middle level management	65	32.5
Low level management	118	59.0
Total	200	100

Source, Author (2014)

3.4 Sampling procedure and sample size

A sampling frame is a complete list of all the members of the population that we wish to study (Kothari, 2004).The sampling frame for this study was the list of employees working in all the departments and sections of the banks Moi Avenue and Kimathi branches in Nairobi. The study adopted a mathematical formula for the purpose of determining the sample size. (Taro Yemane, 1970) has suggested the following mathematical formula for determining sample size.

$$N = \frac{n}{1+N(e)2}$$

Where, N is the total population size, and e is the error or confidence level. The conventional confidence level of 95% was used to ensure a more accurate result from the sample. Based on this, the error term would equal to 0.05. Using the total population of 200 and error margin of 0.05, the sample size was calculated as follows.

n=132 respondents

3.5 Sample size

Stratified random sampling technique was used to select the sample. According to (Kerry & Bland (1998) the technique produce estimates of overall population parameters with greater precision and ensures a more representative sample is derived from a relatively homogeneous population. The study groups the population into four strata i.e. low level, middle level, top level management and family bank pesa pap agents. This in turn increases the precision of any estimation methods used. Out of the total population of 200 employees of KCB at Moi Avenue and Kimathi Branches, a sample size of 132 was taken. Stratified proportionate sampling will be adopted to select the 132 participants. 132 represented 66% of the total population, thus from each strata the research picked 66%.

Table 3.2: Sample Size

Department	Population	Percent	Sample
Top Management	17	66%	11
Middle level management	235	66%	43
Low level management	498	66%	78

Source, Author (2014)

3.6 Data Collection Instruments

The use of survey method of data collection was chosen for this study. The study used semi structured questionnaires containing closed ended and open ended questions to collect primary data. Questionnaires was administered to the respondent through drop and pick method. The reason for choosing a survey method was because the method is more efficient and economical as compared to other methods such as observation. Disseminating the questionnaires to the respondents through email was chosen because it gave the respondent ample time to give true and accurate information, less costly than personal interviews. Drop and pick questionnaires gave the respondents enough time to think about the response they want to give concerning the influence of ICT competence among bank staff on adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya. Secondary data regarding this study will be sourced from Banks reports and other studies. Together with the data that was collected using the questionnaire, analysis was done and findings and conclusions drawn.

3.6.1 Pilot Test

The study carried out a pilot study to pretest and validates the questionnaire. Cronbach's alpha methodology, which is based on internal consistency, was used. Cronbach's alpha measures the average of measurable items and its correlation. This is in line with a quantitative research design methodology which was employed in this research project.

3.7 Validity of the Instrument

Validity refers to the accuracy and meaningfulness of inferences based on the research results (Mugenda & Mugenda, 2003) can be enhanced by absence of errors in the data collected. The research instrument was piloted in with 15 respondents who did not form part of the respondents selected for the study. This was ensured by going through the questionnaire with the respondents to ascertain that each of the items is framed in the least ambiguous way. The pilot study aimed at establishing construct validity of the instruments (Mugenda & Mugenda, 1999). The pilot study assisted in identifying the problems which the respondents may encounter in the process of answering the questions put across to them. The piloted questionnaire was revised and ambiguous items modified.

3.8 Reliability of the Instrument

In this study, a pilot study was carried out on with 10 staff of KCB at Kipande Branch who did not be included in the actual data collection. The researcher administered the instruments personally to the respondents. The feedback was used to validate the instruments in readiness for the study. After administering the instruments to the selected respondents, the data obtained was a true reflection of the variables under study. To test the reliability of the

instruments, the researcher used the split-half technique. The instrument was split into two sub sets (the sets which have odd numbers and even numbers). All even numbered items and odd numbered responses in the pilot study were computed separately. By using this method, the researcher aimed at determining the co-efficient of internal consistency and the reliability co-efficient whose value varied between 0.00 (indicating no reliability) and +1.00 (indicating perfect reliability). The odd numbered scores for all items were correlated with even numbered scores using Pearson Product Moment Correlation Co-efficient of the entire test.

The researcher used Spearman Brown Prophecy formula:

$$= \frac{2\,x\,Corr.between\,the\,halves}{1+Corr\,between\,the\,halves} \quad \text{Or Re} = \frac{2R}{r+1}$$

Where Re = reliability of the original test

r = reliability of the coefficient resulting from correlating the scores of the odd items with the scores of the even items. A coefficient of 0.70 was considered adequate but a coefficient of 0.80 is good according to Gay (2003).

3.9 Data Collection Procedure

The researchers applied for a permit from National Council for Science Technology and Innovations before embarking on the study. The researcher sought an appointment with respondents before administering research instruments.The questionnaires was administered by the researcher and trained research assistants through a drop-wait-and-collect method. The researcher and the research assistants took the questionnaire to the selected respondents who

were selected through a random procedure to fill the questionnaires as they are waited. The key informants' interviews was conducted by the researcher on appointment with the heads of departments in their offices.

3.10 Data Analysis

In this study, a descriptive approach to data analysis was used to analyze data collected on the influence of ICT competence among bank staff on adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya. The researcher perused through the completed questionnaires. Quantitative data collected was analyzed using SPSS and presented through percentages, means, standard deviations and frequencies. The information was displayed by use of tables. It involved tallying up responses, computing percentages of variations in response as well as describing and interpreting the data in line with the study objectives and assumptions through use of SPSS. Content analysis was used to analyze data that is qualitative nature or aspect of the data collected from the open ended questions. In addition, a multiple regression was used to measure the quantitative data and was analyzed using SPSS too.

The regression equation is:

$$Y= \beta_0+ \beta_1X_1+\beta_2X_2+ \beta_3X_3+ \beta_4X_4+ \varepsilon$$

3.11 Ethical Consideration

While conducting the research, the researcher should make an effort at all times to avoid research procedures that are likely to cause any physical or emotional harm such as violating

informant's rights to privacy by posing sensitive questions or by gaining access to records that may contain personal data and ensuring the confidentiality of the data obtained; and learning enough about the culture of informants to ensure it is respected during the data collection process. The ethical issues related to the study were addressed by maintaining high level confidentiality of the information volunteered by the respondents and not to be disclosed to protect their rights. All the personal details was limited to general information. Moreover the researcher had an introduction letter from the institution for introduction to the host institution to ensure that data collected was for educational purpose only.

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATIONS AND PRESENTATION

4.1 Introduction

This chapter introduces the interpretation and presentation of the findings obtained from the field. The chapter presents the background information of the respondents and findings of the analysis based on the objectives of the study.

4.2 Respondents Information

Table 4.3: Employees Age

Age distribution	Frequency	Percentage
20 to 30 years	38	30.6
31 to 40 years	53	42.7
41 to 45 years	15	12.1
45 to 50 years	12	9.7
above 51 years	6	4.8
Total	**124**	**100**

The study requested the respondents to indicate their age category. From the findings the study established that 42.7% of the respondents were aged between 31 to 40 years, 30.6% of the respondents were aged between 20 to 30 years, 12.1% of the respondents were aged between 41 to 50 years, 9.7% of the respondents were aged between 45 to 50 years, whereas 4.8% of the respondents were aged above 50 years. This is an indication that respondents were well distributed in terms of their age

Table 4.4: Gender of the respondent

Age distribution	Frequency	Percentage
Male	68	55
Female	56	45
Total	**124**	**100**

The study sought to determine the gender of the respondents, from the findings as shown in the figure above, the study established that 55% of the respondents were males whereas 45% were females, this is an indication that both genders were fairly represented in this research and thus the findings of this study did not suffer from gender bias.

Table 4.5: Highest Level of Education

Age distribution	Frequency	Percentage
certificate	20	16.3
diploma	37	29.6
degree	52	42
post graduate	15	12.1
Total	**124**	**100**

The study requested the respondent to indicate their highest level of education. From the findings, 42% of the respondent indicated their highest level as bachelor's degree, 29.6 % of the respondents indicated their highest level of education as college diploma certificates, and 16.3% of the respondent indicated their highest level as college certificate, whereas 12.1% of the respondents indicated their highest level as post graduate. This is an indication that most

of the respondents focused in this study had bachelor's degree as their highest level of education.

Table 4.6: Employees Period of service in the organization

Age distribution	Frequency	Percentage
less than 1 year	10	8
1 to 3 years	17	13.4
3 to 5 years	30	24.3
above 5 years	67	54.3
Total	**124**	**100**

The study requested respondent to indicate the number of years they had severed for in the organization. From the findings, majority of the respondents as shown by 54.3% indicated that they had to serve for a period of more than 5 years, 24.3% of the respondent indicated to have served that organization for a period of 3 to 5 years, 13.4% of the respondents indicated to have served that organization for of 1 to 3 years whereas 8 % of the respondents indicated to have served in for a period not exceeding 8 years, this indicates that most of the respondents had served for a considerable period of time and thus their knowledge in this field could be relied upon in this study.

4.3 Competence in ICT

Table 4.7: Competence in ICT influence adoption of e-banking in Kenya Commercial Bank

Opinion	Frequency	Percentage
Yes	92	74.2
No	32	25.8
Total	**124**	**100**

The research sought to establish whether Competence in ICT influence adoption of e-banking in Kenya Commercial Bank, Nairobi, from the research findings, majority of the respondents as shown by 74.2% agreed that competence in ICT influences adoption of e-banking in Kenya Commercial Bank, Nairobi whereas 25.8% of the respondents were of the contrary opinion this implies that competence in ICT influence adoption of e-banking in Kenya Commercial Bank, Nairobi.

Table 4.8: Extent to which competence in ICT influences adoption of e-banking in Kenya Commercial Bank

Extent	Frequency	Percentage
Very great extent	32	25.8
Great extent	65	52.4
Moderate extent	16	12.9
Little extent	11	8.9
Total	**124**	**100**

The study sought to establish the extent to which ICT influence adoption of e-banking in Kenya Commercial Bank, from the research findings, 52.4% of the respondents indicated to a great extent, 25.8% of the respondents indicated to a very great extent, 12.9% of the respondents indicated to a moderate extent whereas 8.9% of the respondents indicated to a little great extent. This implies that ICT influences adoption of e-banking in Kenya Commercial Bank to a great extent.

Table 4.9: Effects of competence in ICT on adoption of e-banking in Kenya Commercial Bank

Statement	strongly agree	agree	Moderate	disagree	Strongly disagree	Mean	Std deviation
The tremendous increase in the number of users is attributed to the ease of use and by number of mobile phone owners	55	60	6	2	1	1.66	0.24
ATMs allow account holders to do various transactions on their accounts without going into a bank branch	54	62	5	1	2	1.67	0.25
Internet banking allows account holders to access their accounts from anywhere using their PCs	50	60	8	3	3	1.78	0.22
Internet banking allows the account holder to access account information and transactions	40	69	11	2	2	1.85	0.24

The study sought to determine the level at which to respondents agreed with the above statement relating to the effects of competence in ICT on adoption on adoption of e-banking in Kenya Commercial Bank. From the research findings, majority of the respondents agreed that; The tremendous increase in the number of users is attributed to the ease of use and by number of mobile phone owners as shown by a mean of 1.66, ATMs allow account holders to do various transactions on their accounts without going into a bank branch as shown by mean of 1.67, Internet banking allows account holders to access their accounts from anywhere using their PCs as shown by a mean of 1.78, Internet banking allows the account

holder to access account information and transactions as shown by mean of 1.85. The above findings concur with the research findings by (AU & Kauffman, 2008). M-banking enables customers to view their balances, transfer money, check mini-statement, purchase airtime, and pay utility bills and to receive SMS alerts whenever transactions have occurred in their accounts.

4.4 Technical staff

Table 4.10: Technical staff influences the adoption of e-banking in Kenya Commercial Bank

Opinion	Frequency	Percentage
Yes	95	76.6
No	29	23.4
Total	**124**	**100**

The research sought to determine whether Technical staff influences the adoption of e-banking in Kenya Commercial Bank, from the research findings, majority of the respondents as shown by 76.6% were of the opinion that Technical staff influences the adoption of e-banking in Kenya Commercial Bank whereas 23.4% of the respondents were of contrary opinion. This implies that Technical staff influences the adoption of e-banking in Kenya Commercial Bank.

Table 4.11: Extent to which technical staff influence the adoption of e-banking in Kenya Commercial Bank

Extent	Frequency	Percentage
Very great extent	22	17.7
Great extent	84	67.7
Moderate extent	11	8.9
Little extent	7	5.6
Total	124	100

The study sought to determine the extent to which technical staff influences adoption of e-banking in Kenya Commercial Bank. From the research findings 67.7% of the respondents indicated to a great extent 17.7% of the respondents indicated to a very great extent, 8.9% of the respondents indicated to a moderate extent whereas 5.6% of the respondents indicated to a little extent. This implies that technical staff influences adoption of e-banking in Kenya Commercial Bank to a great extent.

Table 4.12: Statements relating to the effect attitudes of technical staff's on the adoption of e-banking in Kenya Commercial Bank

Statement	strongly agree	agree	Moderate	disagree	Strongly disagree.	Mean	Std deviation
Attitudes are found to be fundamental in the acceptance, implementation and success of new technologies	44	70	7	2	1	1.76	0.25
For ICT systems to be successful, it is suggested that staff need positive attitudes to ICT	40	74	6	2	2	1.81	0.26
An individual's behavior is determined by one's intention to perform the behaviour, and that this intention is influenced jointly by an individual's attitude and subjective norm	39	77	4	3	1	1.79	0.27
An individual could hold negative attitudes to a system, but would still use it because it has high - perceived usefulness	33	85	4	0	2	1.81	0.29
Attitude influences behavioural intention to use, and subsequent actual use	42	69	8	4	1	1.81	0.24

The study sought to determine the level at which the respondents agreed with the above statement relating to the effects of technical staff on adoption of e-banking in Kenya Commercial Bank. From the research findings, majority of the respondents agreed that; attitudes are found to be fundamental in the acceptance, implementation and success of new technologies as shown by a mean of 1.76 , an individual's behavior is determined by one's

intention to perform the behaviour, and that this intention is influenced jointly by an individual's attitude and subjective norm as shown by a mean of 1.79, attitude influences behavioural intention to use, and subsequent actual use, an individual could hold negative attitudes to a system, but would still use it because it has high - perceived usefulness, For ICT systems to be successful, staff need positive attitudes to ICT as shown by mean of 1.81 in each case the above findings concurs with the study findings by (Fine, 1986; & Evald, 1996) they suggested that For ICT systems to be successful, staff need positive attitudes to ICT.

4.5 Knowledge of ICT Packages

Table 4.13: Knowledge of ICT packages influence adoption of e-banking in Kenya Commercial Bank

Opinion	Frequency	Percentage
Yes	104	83.9
No	20	16.1
Total	**124**	**100**

The research sought to determine whether knowledge of ICT packages influences the adoption of e-banking in Kenya Commercial Bank, from the research findings, majority of the respondents as shown by 83.9% were of the opinion that knowledge of ICT packages influences the adoption of e-banking in Kenya Commercial Bank whereas 16.1% of the respondents were of contrary opinion. This implies that knowledge of ICT packages influences the adoption of e-banking in Kenya Commercial Bank.

Table 4.14 Extent to which knowledge of ICT packages influence adoption of e-banking in Kenya Commercial Bank

Extent	Frequency	Percentage
Very great extent	23	18.5
Great extent	78	62.9
Moderate extent	15	12.1
Little extent	8	6.5
Total	124	100

The study sought to determine the extent to which knowledge of ICT packages influences adoption of e-banking in Kenya Commercial Bank. From the research findings 62.9% of the respondents indicated to a great extent 18.5% of the respondents indicated to a very great extent, 12.1% of the respondents indicated to a moderate extent whereas 6.5% of the respondents indicated to a little extent. This implies that knowledge of ICT packages influences adoption of e-banking in Kenya Commercial Bank to a great extent.

Table 4.15: Effects of knowledge of ICT packages on adoption of e-banking in Kenya Commercial Bank

Statement	strongly agree	agree	moderate	disagree	Strongly disagree	Mean	Std deviation
Intranet is the generic term for a collection of private computer networks within an organization	45	67	7	4	1	1.78	0.24
Developing quality software products in the schedule and considering planned costs has always been a challenge to organizations	47	66	7	2	2	1.76	0.24
The quality of a software product has led organizations to invest in improving their organizational software processes	35	80	5	3	1	1.83	0.27
The focus of knowledge management is connecting people, processes and technology for the purpose of leveraging corporate knowledge	37	81	4	1	1	1.77	0.28

The study sought to determine the level at which to respondents agreed with the above statement relating to the effects of knowledge of ICT packages on adoption of e-banking in Kenya Commercial Bank. From the research findings, majority of the respondents agreed that; Developing quality software products in the schedule and considering planned costs has always been a challenge to organizations as shown by mean of 1.76, the focus of knowledge management is connecting people, processes and technology for the purpose of leveraging

corporate knowledge as shown by mean of 1.77, intranet is the generic term for a collection of private computer networks within an organization as shown by mean of 1.78, the quality of a software product has led organizations to invest in improving their organizational software processes as shown by mean of 1.83, the above findings concurs with the research findings by Dillon and Morris, (1996) that the quality of a software product has led organizations to invest in improving their organizational software processes.

4.6 Budgetary Allocation

Table 4.16: Budgetary allocation influences the adoption of e-banking in Kenya Commercial Bank

Opinion	Frequency	Percentage
Yes	111	89.5
No	13	10.5
Total	124	100

The research sought to determine whether budgetary allocation influences the adoption of e-banking in Kenya Commercial Bank, from the research findings, majority of the respondents as shown by 89.5 % were of the opinion that budgetary allocation influences the adoption of e-banking in Kenya Commercial Bank whereas 10.5% of the respondents were of contrary opinion. This implies that budgetary allocation influences the adoption of e-banking in Kenya Commercial Bank

Table 4.17: Extent to which budgetary allocation influence adoption of e-banking in Kenya Commercial Bank

Extent	Frequency	Percentage
Very great extent	32	25.8
Great extent	74	59.7
Moderate extent	12	9.7
Little extent	6	4.8
Total	124	100

The study sought to determine the extent to which budgetary allocation influences adoption of e-banking in Kenya Commercial Bank. From the research findings 59.7% of the respondents indicated to a great extent 25.8 % of the respondents indicated to a very great extent, 9.7% of the respondents indicated to a moderate extent whereas 4.8% of the respondents indicated to a little extent. This implies that budgetary allocation influences adoption of e-banking in Kenya Commercial Bank to a great extent.

Table 4.18: Statements relating to the effects of budgetary allocation on adoption of e-banking in Kenya Commercial Bank

Statement	strongly agree	agree	moderate	disagree	Strongly disagree	Mean	Std deviation
Investment and reliance in e-banking innovation by its providers to offer their services makes it essential to understand how various aspects of consumer behaviour affect the innovation and respond to service quality	37	75	6	4	2	1.86	0.25
Local commercial banks should invest heavily in mobile banking in order to increase customer enrollment and awareness	48	66	5	2	3	1.76	0.24
Kenyan banks are betting on cost controls and increased mobile and agency banking to grow net earnings each year, marking a shift from dependence on an aggressive expansion model that fuelled profit growth over the past five years	30	84	5	3	2	1.90	0.28
increased adoption of internet as a delivery channel contributes a gradual reduction in overhead expenses	33	82	5	1	3	1.86	0.28

The study sought to determine the extent to respondents agreed with the above statement relating to the effects of budgetary allocation on adoption of e-banking in Kenya Commercial Bank. From the research findings, majority of the respondents agreed that; local commercial

banks should invest heavily in mobile banking in order to increase customer enrollment and awareness as shown by a mean of 1.76, increased adoption of internet as a delivery channel contributes a gradual reduction in overhead expenses, Investment and reliance in e-banking innovation by its providers to offer their services makes it essential to understand how various aspects of consumer behaviour affect the innovation and respond to service quality as shown by a mean of 1.86 in each case, Kenyan banks are betting on cost controls and increased mobile and agency banking to grow net earnings each year, marking a shift from dependence on an aggressive expansion model that fuelled profit growth over the past five years as shown by a mean of 1.90. the above findings concurs with the argument in the Business Daily (12March, 2013) that Kenyan banks are betting on cost controls and increased mobile and agency banking to grow net earnings this year, marking a shift from dependence on an aggressive expansion model that fuelled profit growth over the past five years.

4.7 Regression Analysis

Table 4.19: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.874[a]	.764	.731	.12225

Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable. From the findings in the table below the value of adjusted R squared was 0.731 an indication that there was variation of 73.1% on the E-banking adoption due to changes in competence in ICT, Technical staff,

knowledge on ICT packages and budgetary allocation at 95% confidence interval. This shows that 73.1 % changes in E-banking adoption could be accounted to changes in competence in ICT, Technical staff, knowledge on ICT packages and budgetary allocation. R is the correlation coefficient which shows the relationship between the study variables, from the findings shown in the table below there was a strong positive relationship between the study variables as shown by 0.874.

Table 4.20: ANOVA

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.616	4	0.404	3.131	.048[b]
	Residual	16.383	127	0.129		
	Total	17.999				

From the ANOVA statics in the table below, the processed data, which is the population parameters, had a significance level of 0% which shows that the data is ideal for making a conclusion on the population parameters as the value of significance (p-value) is less than 5%. The calculated value was greater than the critical value (3.131>1.9861) an indication that there were significant difference between E-banking adoption and competence in ICT, Technical staff, knowledge on ICT packages and budgetary allocation. The significance value was less than 0.05 indicating that the model was significant.

Table 4.21: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.878	.357		2.459	.016
	Competence of ICT	.305	.097	.402	3.145	.002
	Technical staff	.245	.147	.182	1.664	.010
	Knowledge of ICT package	.158	.100	.183	1.583	.017
	Budgetary allocation	.071	.093	.091	.760	.049

The established regression equation was

$$\mathbf{Y = 0.878 + 0.305\ X_1 + 0.245\ X_2 + 0.158\ X_3 + 0.071\ X_4}$$

From the above regression equation, it was revealed that holding competence in ICT, Technical staff, knowledge on ICT packages and budgetary allocation, E banking adoption would stand at 0.878, a unit increase in competence of ICT would lead to increase in E banking adoption by a factor of 0.305, a unit increase in Technical staff would lead to increase in E banking adoption by a factor of 0.245, a unit increase in Knowledge of ICT package would lead to increase in E banking adoption by a factor of 0.158 and a unit increase in budgetary allocation would lead to increase in E banking adoption by factors of 0.071. The study further revealed that competence in ICT, Technical staff, knowledge on ICT packages and budgetary allocation were statistically significant to affect the E banking adoption , as all the p value (sig) were less than 0.05%. The study also found that there was a positive relationship between E banking adoption and competence in ICT, Technical staff, knowledge on ICT packages and budgetary allocation.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

From the analysis and data collected, the following discussions, conclusion and recommendations were made. The responses were based on the objectives of the study. This study sought to assess the extent to which competence in ICT influences adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya ,to assess the influence of technical staff on adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya, to assess the extent to which knowledge of ICT packages influences adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya, to assess the extent to which budgetary allocation influence adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya.

Descriptive and inferential statistics have been used to discuss the findings of the study. The study targeted a sample size of 132 respondents from 124 which filled in and returned the questionnaires making a response rate of 93.9%. This response rate was satisfactory to make conclusions for the study. The response rate was representative. According to Mugenda and Mugenda (1999), a response rate of 50% is adequate for analysis; a rate of 60% is good and a response rate of 70% and over is excellent. Based on the assertion, the response rate was considered to excellent.

5.2 Summary of the findings

5.2.1 Competence in ICT

The research established that competence in ICT influenced the adoption of e-banking in Kenya Commercial Bank, Nairobi to a great extent (52%). the research also revealed that; the tremendous increase in the number of users is attributed to the ease of use and by number of mobile phone owners, ATMs allow account holders to do various transactions on their accounts without going into a bank branch, Internet banking allows account holders to access their accounts from anywhere using their PCs, Internet banking allows the account holder to access account information and transactions. The above findings concur with the research findings by (AU & Kauffman, 2008). M-banking enables customers to view their balances, transfer money, check mini-statement, purchase airtime, and pay utility bills and to receive SMS alerts whenever transactions have occurred in their accounts.

5.2.2 Technical staff

The research revealed that technical staff influences the adoption of e-banking in Kenya Commercial Bank to a great extent (67%), attitudes are fundamental in the acceptance, implementation and success of new technologies, an individual's behavior is determined by one's intention to perform the behaviour, and that this intention is influenced jointly by an individual's attitude and subjective norm, attitude influences behavioural intention to use, and subsequent actual use, an individual could hold negative attitudes to a system, but would still use it because it has high - perceived usefulness, For ICT systems to be successful, staff need positive attitudes to ICT. The above findings concur with the study findings by (Fine,

1986; & Evald, 1996) they suggested that For ICT systems to be successful, staff need positive attitudes to ICT.

5.2.3 Knowledge of ICT packages

The research established that knowledge of ICT packages influences the adoption of e-banking in Kenya Commercial Bank to a great extent (83.9%). the research further notes that developing quality software products in the schedule and considering planned costs has always been a challenge to organizations, the focus of knowledge management is connecting people, processes and technology for the purpose of leveraging corporate knowledge, intranet is the generic term for a collection of private computer networks within an organization, the quality of a software product has led organizations to invest in improving their organizational software processes. The above findings concurs with the research findings by Dillon and Morris, (1996) that the quality of a software product has led organizations to invest in improving their organizational software processes.

5.2.4 Budgetary Allocation

The research revealed that budgetary allocation influences the adoption of e-banking in Kenya Commercial Bank to a great extent (59.7%), local commercial banks should invest heavily in mobile banking in order to increase customer enrollment and awareness, increased adoption of internet as a delivery channel contributes a gradual reduction in overhead expenses, Investment and reliance in e-banking innovation by its providers to offer their services makes it essential to understand how various aspects of consumer behaviour affect the innovation and respond to service quality, Kenyan banks are betting on cost controls and increased mobile and agency banking to grow net earnings each year, marking a shift from

dependence on an aggressive expansion model that fuelled profit growth over the past five years. The above findings concurs with the argument in the Business Daily (12March, 2013) that Kenyan banks are betting on cost controls and increased mobile and agency banking to grow net earnings this year, marking a shift from dependence on an aggressive expansion model that fuelled profit growth over the past five years.

5.3 Conclusions

From the findings the study established that Internet banking allows account holders to access their accounts from anywhere using their PCs thus the study concludes that competence in ICT has positive influence on the adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya.

The study established that attitudes are found to be fundamental in the acceptance, implementation and success of new technologies thus the study concludes that positive altitude amongst employees is crucial for successful adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya.

The study established that the focus of knowledge management is connecting people, processes and technology for the purpose of leveraging corporate knowledge thus the study concludes that knowledge on ICT packages had a positive influence on adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya .

The study established that local commercial banks should invest heavily in mobile banking in order to increase customer enrollment and awareness thus the study concludes that budgetary

allocation had a positive influence on adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya.

5.4 Recommendations

In order to ensure successful adoption and implementation of e-banking the study recommends that the management of KCB should consider the following;

Ensure that knowledge is transferred among employees and customers and ascertain that legal opinions and reviews in areas of uncertainty regarding Electronic banking activities/electronic money are conducted.

Banks should train staff about their responsibilities under the institution's privacy policies and information practice, they should also ensure that online privacy policies and information practices are consistent with the bank's policies for traditional.

Implement physical and system access controls, including on-site security, system passwords, firewalls, encryption, and intruder detection mechanisms aimed at repelling unauthorized intruders, Utilize authentication controls to preserve the integrity of the data.

Such, controls include acknowledgment, computerized logs, digital signatures, edit checks, and separation of duties, aimed at maintaining adequate audit trails and the accuracy of data this will help to increase confidence.

5.5 Ares for Further Study

The study sought to assess the influence of ICT competence among bank staff on adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya, the study recommends that an in-depth study should be done on the challenges facing adoption e-banking among Commercial Bank in Kenya.

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APPENDICES

Appendix I: Questionnaire

Kindly ticks in the space provided (√) the correct answer or supply the required information where, required, please specify and elaborate.

Part A: Respondents Information

1. Name……. (Optional)
2. Age of the respondent

   20-30 years ( ) 31to 40 years ( ) 41 to45 years ( )

   46 to 50 years ( ) above 50 years ( )
3. Gender of the respondent?

   Male 〔 〕 Female 〔 〕
4. What is your highest level of education?

   Postgraduate 〔 〕 Degree 〔 〕 Diploma 〔 〕 certificate 〔 〕
5. How long have you worked in this organization?

   Less than 1 year 〔 〕 1-3 years 〔 〕 3-5 years 〔 〕 above 5 years 〔 〕

Part B: Competence in ICT

6. Does competence in ICT influence adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya?

   Yes [ ]

   No [ ]
7. To what extent does competence in ICT influence adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya?

   Very great extent [ ]

   Great extent [ ]

   Moderate extent [ ]

   Little extent [ ]

   No extent [ ]
8. What is your level of agreement with the following statements relating to effects of competence in ICT on adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya? Scale 1=strongly agree 2= agree 3= moderate 4= disagree 5=strongly disagree.

Statement	1	2	3	4	5
The tremendous increase in the number of users is attributed to the ease of use and by number of mobile phone owners					
ATMs allow account holders to do various transactions on their accounts without going into a bank branch					
Internet banking allows account holders to access their accounts from anywhere using their PCs					
Internet banking allows the account holder to access account information and transactions					

Part C: technical staff

9. Does technical staff influence the adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya?

   Yes [ ]

   No [ ]

10. To what extent does technical staff influence the adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya?

    Very great extent [ ]

    Great extent [ ]

    Moderate extent [ ]

    Little extent [ ]

    No extent [ ]

11. What is your level of agreement with the following statements that relate to effect of technical staff on the adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya Scale 1=strongly agree 2= agree 3= moderate 4= disagree 5=strongly disagree.

Statement	1	2	3	4	5
attitudes are found to be fundamental in the acceptance, implementation and success of new technologies					
For ICT systems to be successful, it is suggested that staff need positive attitudes to ICT					
an individual's behavior is determined by one's intention to					

perform the behaviour, and that this intention is influenced jointly by an individual's attitude and subjective norm					
an individual could hold negative attitudes to a system, but would still use it because it has high - perceived usefulness					
attitude influences behavioural intention to use, and subsequent actual use					

Part D: Does knowledge of ICT packages

12. Does knowledge of ICT packages influence adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya?

    Yes [ ]

    No [ ]

13. To what extent does knowledge of ICT packages influence adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya?

    Very great extent [ ]

    Great extent [ ]

    Moderate extent [ ]

    Little extent [ ]

    No extent [ ]

14. What is your level of agreement with the following statements that relating effects of knowledge of ICT packages influence adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya? Scale 1=strongly agree 2= agree 3= moderate 4= disagree 5=strongly disagree.

Statement	**1**	**2**	**3**	**4**	**5**
Intranet is the generic term for a collection of private computer networks within an organization					
Developing quality software products in the schedule and considering planned costs has always been a challenge to organizations					
The quality of a software product has led organizations to invest in improving their organizational software processes					

The focus of knowledge management is connecting people, processes and technology for the purpose of leveraging corporate knowledge					

Part E: Budgetary Allocation

15. Does budgetary allocation influence the adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya?

    Yes [ ]

    No [ ]

16. To what extent does budgetary allocation influence adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya?

    Very great extent [ ]

    Great extent [ ]

    Moderate extent [ ]

    Little extent [ ]

    No extent [ ]

17. Indicate your level of agreement with the following statements relating effects of budgetary allocation on adoption of e-banking in Kenya Commercial Bank, Nairobi county Kenya. Scale 1=strongly agree 2= agree 3= moderate 4= disagree 5=strongly disagree.

Statement	**1**	**2**	**3**	**4**	**5**
Investment and reliance in e-banking innovation by its providers to offer their services makes it essential to understand how various aspects of consumer behaviour affect the innovation and respond to service quality					
Local commercial banks should invest heavily in mobile banking in order to increase customer enrollment and awareness					
Kenyan banks are betting on cost controls and increased mobile and agency banking to grow net earnings each year, marking a shift from dependence on an aggressive expansion model that fuelled profit growth over the past five years					

increased adoption of internet as a delivery channel contributes a gradual reduction in overhead expenses					

Thank you for your time