ST.MARY'S UNIVERSITY COLLEGE
SCHOOL OF GRADUATE STUDIES

ASSESSMENT OF FACTOR AFFECTING ADOPTION ON ELECTRONIC BANKING IN ABYSSINIA BANK, ETHIOPIA

BY

MERON WORKAGEGN

MAY, 2018
ADDIS ABABA, ETHIOPIA

ASSESSMENT OF FACTOR AFFECTING ADOPTION ON ELECTRONIC BANKING IN ABYSSINIA BANK, ETHIOPIA

BY

MERON WORKAGEGN

SGS/0083/2008B

A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY COLLEGE, SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF GENERAL BUSINESS ADMINISTRATION

MAY, 2018
ADDIS ABABA, ETHIOPIA

ST. MARY'S UNIVERSITY COLLEGE
SCHOOL OF GRADUATE STUDIES
FACULTY OF BUSINESS

ASSESMENT OF FACTOR AFECTING ADOPTION ON ELECTRONIC BANKING IN ETHIOPIA BANKING INDUSTRY (CASE OF ABYSSINIA BANK)

BY
MERON WORKAGEGN

APPROVED BY BOARD OF EXAMINERS

_____   _____

Dean, Graduate Studies   **Signature & Date**

_____   _____

Advisor   **Signature & Date**

_____   _____

External Examiner   **Signature & Date**

_____   _____

Internal Examiner   **Signature & Date**

DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Zemenu Aynadis (Ass. Pro.) All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

MERON WORKAGEGN   _____

Name   Signature

St. Mary's University College, Addis Ababa   May, 2018

ENDORSEMENT

This thesis has been submitted to St. Mary's University College, School of Graduate studies for examination with my approval as a university advisor.

Zemenu Aynadis (Ass. Prof)

_____   _____

Advisor   **Signature**

St. Mary's University College, Addis Ababa   May, 2018

ACKNOLEDGMENTS

List of Tables

List of Tables

Page

List of figure

ACRONYMS

ATM …………..   Automated Teller's Machine
BOA …………   Bank of Abyssinia
CBE …………...   Commercial bank of Ethiopia
NBE …………..   National bank of Ethiopia
E-banking ……..   Electronic Banking
EFT …………...   Electronic fund transfer
POS …………...   Point - of -Sales |Transfer Terminals
SMS …………..   short text message
TOE …………...   Technology – organization – environment
TAM …………..   Technology Acceptance Model
PU …………….   Perceived usefulness
PEOU …………   perceived ease of use
IS ……………...   Information System
TPB …………...   Theory of Planned Behavior
TRA …………..   Theory of Reasoned Action
PIN ……………   Personal identification number
SPSS …………   statistical package for social scientists

ABSTRACT

The purpose of this study is to assess factor adoption on Electronic Banking in bank of Abyssinia and to fill the gap in order to maximize the usage of the service and to avoid any impediment regarding the adoption of new technology. In this research descriptive research method was used to investigate research objective and questions and both primary and secondary source of date was used. The researcher applied convenience sampling technique to collect the data and a research framework developed based on technology – Organization – Environment Model (TOE) developed by Tornatzky & Fleisher. A total of 35 questionnaires were distributed to purposely sampled Abyssinia bank staffs. Out of the total 35 questionnaires, 31 questionnaires were obtained. In addition to questionnaire, the researcher conducted an interview with only E-payment/IT managers for the reason that it was not well-situated to interview all bank managers; and reviews some bank documents regarding E-banking system. The result of the study indicate that, the major factors on adoption of Electronic banking in BOA are :- Security risk , lack of trust, high rate of illiteracy , lack of legal and regulatory frame work, lack of ICT infrastructure , absence of computation between local and foreign banks, frequent power interruption & security issues. The study recommends a series of measures which could be taken by the banking industry and by government to address various challenges identified. supporting banking industry by investing on ICT infrastructure, solve the problem on the power interruption, establishing a clear set of legal framework on the use of technology in banking industry and banks needs to be focused on technological innovation competition rather than traditional bases of retail bank computation.

Key Words: - E-banking, Technology Organization Environment frame work, Bank of Abyssinia

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Information technology is considered as the key driver for the change taking place around the world (Ayana, 2012). Due to a persistent and steadily growth of information and communication technology, the world banking industry is entering into new phenomena of exceptional form of competition supported by modern information and communication infrastructure On the other hand E-banking has enabled banking institutions to compete more effectively in the global environment by extending their products and services beyond the restriction of time and space (Turban, 2008).This is because Technological innovations play a crucial role in banking industry by creating a value for banks and customers, that it enables customers to perform banking transactions without visiting the bank directly (Gardachew, 2010).

The face of rapid expansion of electronic payment (E-payment) systems through the developed and the developing world is so fast so that Ethiopian's financial sector cannot remain an exceptional in expanding the use of this system (Gardachew, 2010). The banking and financial industries have shown tremendous in volume and complexity (Dass, 2011) this fast emerging economy is bringing with it rapidly changing technologies, increasing knowledge intensity in all areas of business and creating virtual supply chain and new forms of business and service delivery channels such as e-banking.

In these days, the balance of power seems to be shifting to the customers. Customers are increasingly demanding more value, with goods customized to their exact needs, at less cost, and quickly as possible. So to meet these demands, business need to develop innovative ways of creating value which often require different enterprise architectures, different IT infrastructures and different way of thinking about doing business. This transformation of business from an old company to a new agile electronic corporation is not easy and requires a lot of innovative thinking, planning and investment (Shah, 2009)

According to World Wide Work's research report (2004), the number of online bank accounts in South Africa has surpassed the one million mark at the end of 2003 and is growing annually on

the average 29%, thus representing about one third of Internet users, and about 9% of all banking consumers (Altun, 2012)

Beginning from the late 1990's to date internet banking has steadily grown to become a standard offering of most banks. When a new innovation appears it attracts attention and the attention to internet banking is due in part to the rapid diffusion of the internet and growth of e-commerce.

The appearance of E-banking in Ethiopia goes back to the late 2001, when the largest bank state owned, commercial bank of Ethiopia (CBE) introduced ATM to deliver service to the local users. In addition to eight ATM located in Addis Ababa, CBE has had visa membership since November 14, 2005. But due to lack of appropriate infrastructure it failed to reap the fruit of its membership. Despite being the pioneer in introducing ATM based payment system and acquired visa membership, CBE lagged behind Dashen bank, which worked aggressively to maintain its lead in E-payment system (Garedachew, 2010).

Adopting the new technology is also has its own problem as it is stated in different e-banking research among those problems low level of internet penetration and poorly developed telecommunication infrastructure, lack of suitable legal and regulatory frame work for E-commerce and E- payment, low literacy rate and lack of competition among local and foreign competition is the major one.

In Ethiopia cash is still the most dominant medium of exchange and electronic payment systems are at an early stage. All banks in Ethiopia are too late to move with technological advancement and they should clearly chart out the time schedule for their integration and technological advancement. Some of the banks even today do not have their own websites which can help them to provide at least the information on financial services offered by them. In order to encourage further E-banking adoption in developing countries, a better understanding of the barriers and drivers of E-banking is critical (Zhao et al. 2008).

By gaining an in-depth understanding of the factors and conditions that influence developing country' ability to fully adopt and realize its benefits, strategic implications can be generated for the researchers and practitioners regarding how to promote the growth of E-banking in the developing countries.

1.2 Statement of the problem

The banking industry in Ethiopia is underdeveloped and therefore, there is an immediate need to get on capacity building arrangements and modernize the banking system by employing the state of the art of technology being used anywhere in the world. With a growing number of import-export businesses, and increased international trends and international relations, the current banking system is short of providing efficient and dependable services (Garedachew, 2010).

One of the major significance of e-banking product and service is improved efficiency and effectiveness of the operations so that, transactions can be processed faster and most conveniently. Thus it has enhanced customer services, effective distribution, improved operations, faster access to information and improved internal processes. This implies that customers benefited because they are no longer to go the banking halls to handling of cash.

However, despite this importance of e-banking, closer observation shows that there are still long queues seen in some banking halls even as customer still handling too much cash, problem of frequent network failure which have adverse effect and inadequate awareness of available e-banking production and services, even as empirical evidence shows that level of understanding of a product and its commensurate benefits determines the reactions of customers to it and support (Balanchandler, 2010). This indicates that the previous researcher did not give suggestion on this regard.

Even though E-banking has a lot of benefit in delivering service to customers, in Ethiopia customers missed to enjoy with the technological advancement in banking sector which has been entertained elsewhere in Africa and the rest of the world. This is due to lack of awareness or competition among banking industries. The modern E-banking methods like Automated teller machine (ATM), Debit cards, credit card, Tele banking, internet banking, mobile banking and others are new to the Ethiopian banking sectors. E-banking which refers to the use of modern technology that allows customers to access banking services electronically whether it is to withdraw cash, transfer funds and to pay bills, or to obtain commercial information and advices are not well known in Ethiopia.

Considering the low extent of development of ICT infrastructure in developing countries, when compared with the developed countries E-banking ha not really been able to diffuse into society

given the low rate of interest access (Banji & Catherine 2004). Therefore this study intended to assess factors affecting adoption of electronic banking system in Ethiopian banking industry based on the research problems.

By gaining an in-depth understanding of the factors and conditions that influence banks' ability to fully adopt and realize its benefits, strategic implications can be generated for the researchers and the company regarding how to promote the growth of E-banking in Ethiopian banks However, despite the importance of these adoptions, limited studies are currently available in Ethiopia regarding the E-banking system but no one can do on this topic. Many researcher studies on different area like practice of electronic bank in Ethiopia (Meaza, 2013), benefit and challenges of internet banking in commercial bank (Tadesse, 2016) and adoption of electronic banking system in Ethiopian banking industry (Ayana, 2012). Therefore, more studies are still requires to understand the relevance of E-banking in the country to identify areas in which the country lags behind that inhibit their E-banking adoption and diffusion. Therefore to address the current gap in the literature, this study design to examine the E-banking adoption situation in Ethiopia and commonly focusing on the investigation of effect of E-banking system in Ethiopian bank and recommend the appropriate actions to be taken to promote E-banking system in the country.

1.3 Research Questions

In order to address the point under discussion, the research tries to answer the following research questions:

1. What are the factors affecting adoption of E-banking in Abyssinia bank?
2. To what extent technological factors determine E-banking adoption in Abyssinia bank?
3. To what extent an organizational factor determine adopting of E-banking system in Abyssinia bank?
4. To what extent environmental factors determine the adoption of E banking system in Abyssinia bank?

1.4 Objectives of the Study

This research is intended to address two distinct objectives namely general objective and specific objectives that aimed to be meet at the end of the study.

1.4.1 General Objective

The general objective of this study is to assess the factors affecting adoption of E-banking in Abyssinia bank.

1.4.2 Specific Objective

- To determine factors affecting the adoption of E-banking in Abyssinia bank.
- To identify to what extent technological factor affect the adoption E-banking in Abyssinia bank.
- To identify to what extent organizational factor affect the adoption E-banking in Abyssinia bank.
- To identify to what extent environmental factor affect the adoption E-banking in Abyssinia bank.

1.5 Significance of the study

The finding of this study would have potential values to financial institutions, particularly banks to understand the challenges and opportunities relates with adoption of new technology and its advantages in providing service to their customers.

It will be useful to policy makers (NBE) to device strategies that will enhance use of ICT in banking business and for other researcher it may help as a base line or reference.

1.6. Scope of the study

This study was limited itself to interviewing and documentary analysis on Abyssinia bank. Because there are a number of banks scattered around the country and it is impossible to include

all banks in this study. Therefore, the scope of the study was limited to select purposely located in a private bank in the city of Addis Ababa.

1.7. Limitation

This study is limited in scope and sampling size, but it can contribute to further study on factor affecting adoption of electronic banking system in Abyssinia Bank. Due to limited financial resources, time and accessible information to investigate all things within the given time period it was very difficult to conduct. The study wascovering the areas of service delivery within the branches in Addis Ababa.

- The study is conducted based on limited variables because it is difficult to collect all desire information.
- The study only covers one city, Addis Ababa.

1.7 Organization of the Study

The study was organized under five chapters. The introductory parts include background information, statement of the problem, objectives, significance of the study, scope of the study, and the methodology used to conduct the study and second chapter deals with review of related literature. The third chapter methodology the fourth chapter presents the findings from the respondents from the gathered data and analyzed and interpreted. Finally, the last chapter was provide summary of findings, the conclusion of the study and suggests possible recommendation to the existing problem.

2.4 Research gap

There have been a number of valuable studies in the area of e-banking over the years back in different country and others presented evidence for a number ofvariables that influenced customer behavior and intention to use e-banking and mobile banking , however the studyof electronic banking has been given little attention in literatures in Ethiopia.

The existing research in Ethiopia included practice of electronic bank Ethiopia (Meaza, 2013) benefit and challenges of internet banking in commercial bank (Tadesse,2016) and adoption of electronic banking system in Ethiopia banking industry (Ayana 2012). As per the researcher knowledge there is no study conducted with regards to factors influencing adoption of E-banking

in Ethiopia from the perspective of the bank. This study therefore aims at filling that gap by shedding light on issues that influence bank to adopt electronic systems in order to create an understanding of this new technology in the banking sector.

CHAPTER TWO

RELATED LITERATURE REVIEW

2.1 Theoretical Literature Review

2.1.1 Definition of E-banking

E-banking is a form of banking service where funds are transferred through an exchange of electronic signal between financial institutions, rather than exchange of cash, checks, or other negotiable instruments (Kamrul, 2009). E-banking also known as electronic funds transfer (EFT) is simply the use of electronic means to transfer funds directly from one account to another, rather than by check or cash (Melak, 2007).

Electronic banking is a delivery of banking services to customers at their office or home with the help of electronic technology. Daniel (1999) defines electronic banking as a delivery of banks information and services by banks to customers via different delivery platforms that can be used with different terminal devices such as a personal computer and mobile phone with browser or desktop software, telephone or digital television.

The term of E-banking often refers to online banking/Internet banking which is the use of the Internet as a remote delivery channel for banking services (Furst & Nolle, 2002). With the help of the internet, banking is no longer bound to time or geography. Consumers all over the world have relatively easy access to their accounts 24 hours per day, seven days a week.

 E-banking is the use of a computer to retrieve and process banking data (statements, transaction details, etc.) and to initiate transactions (payments, transfers, requests for services, etc.) directly with a bank or with other financial service provider remotely via telecommunications network (Yang, 1997).

2.1.2 Forms of E-banking system

1. **Automated Teller Machines (ATM):-** It is an electronic terminal which gives consumers the opportunity to get banking service at almost any time. To withdraw cash, make deposits or transfer funds between accounts, a consumer needs an ATM card and a personal identification number (PIN).

2. **Point- of-sale Transfer Terminals (POS):-**The system allows consumers to pay for retail purchase with a check card, a new name for debit card. This card looks like a credit card but with a significant difference. The money for the purchase is transferred immediately from account of debit card holder to the store's account (Malak, 2007).

3. **Internet/extranet banking: -** It is an electronic home banking system using web technology in which Bank customers are able to conduct their business transactions with the bank through personal computers.

4. **Mobile Banking: -** is a service that enables customers to conduct some banking services such as account inquiry and funds transfer, by using of short text message (SMS).

Banks offer Internet banking in two main ways. An existing bank with physical offices can establish a Web site and offer Internet banking to its customers in addition to its traditional delivery channels. A second alternative is to establish virtual branchless or Internet-only, Bank almost without physical offices.

2.1.3 The evolution of E- banking system

Electronic innovation in banking industry can be traced back to 1970, when the computerization of financial institutions gained momentum (Malak 2007), However; a visible presence of this was evident to the customers since 1980, with the introduction of ATM. Innovative banking has grown since then, aided by technological developments in the telecommunications and information technology industry. The early decade of the 1990s witnessed the emergence of automated voice response (AVR) technology. By using the AVR Technology, banks could offer telephone banking facilities for financial services. With further advancements in technology, banks were able to offer services, through PC owned and operated by costumers at their convenience, through the use of intranet propriety software. The users of these services were, however, mainly corporate customers rather than retail ones (Sohail & shanmugham 2003). The security first network bank was the first 12
Internet banking in the world that was built in 1995 in USA. After that some famous banks introduced their internet banking one after another, such as Citibank and bank of America.

2.1.4 E-banking system in Ethiopian banking industry

Electronic innovation in banking industry can be traced back to 1970, when the computerization of financial institutions gained energy (Malak, 2007), However; a visible presence of this was evident to the customers since 1980, with the introduction of ATM. Innovative banking has grown since then, added by technological developments in telecommunications and information technology industry.

The appearance of E-banking in Ethiopia goes back to the late 2001, where the largest state owned, commercial bank of Ethiopia (CBE) introduce ATM to deliver service to the local users. Dashen bank, a forerunner in introducing E-banking in Ethiopia, has installed ATMs at convenient locations for its own cardholders.

Dashen bank, a forerunner in introducing E-banking in Ethiopia, has installed ATMs at convenient locations for its own cardholders. Dashen's ATM is available 24 hours a day, seven days a week and 365 days a year providing service to Debit Cardholders and International Visa Cardholders coming to the country. At the end of June 2009, Dashen bank has installed more than 40 ATMs in its area branches, university compounds, shopping malls, restaurants and hotels. In the year 2011 the payment card services have witnessed significant strides, Dashen's ATM service expanded to 70 and 704 POS terminals (Annual report of the bank, 2011).

Harnessing its leadership with advanced banking technology, Dashen Bank signed an agreement with iVery, a South African E-payment technology company, for the introduction of mobile commerce in April 21, 2009. According to the agreement, iVery Payment Technologies has licensed its Gateway and MiCard E-payment processing solution to Dashen Bank. Dashen's Mod birr users can transfer 500 birr to other Mod birr users in 24 hours a day. This would make Dashen Bank the first private bank in Ethiopia to acquire E-commerce and mobile merchant transactions (Amanyehun, 2011). Although Dashen's new technology is one step ahead in that it allows transfer of funds from one's account to others, the first ever E-banking gateway was signed between Ethiopian Commodity Exchange (ECX) and Dashen Bank and CBE. The E-banking system being developed with both banks is designed to give a secure electronic data sharing gateway between clients, banks and ECX, by facilitating a smooth transaction (Abiy, 2008).

By the end of 2008 Wegagen Bank has signed an agreement with Technology Associates (TA), a Kenyan based information technology (IT) firm, for the development of the solutions for the payment system and installation of a network of ATMs on December 30, 2008,

Zemen Bank, the only Ethiopian bank anchored in the idea of single branch banking, by launching full-blown internet banking, a service which is new to Ethiopian banking industry in the year 2010. The bank tested the venture through its first phase of the online service, and now it is already started the full-fledged version, which enable customers to make online money transfer freely. Previously, the online banking service, delivered by the bank, only gave access to bank statements and exchange rate information. The new and never-been-tried service proposed by the bank is to include free account money transfer, corporate payroll uploading system where employers could upload payroll to the system and make payments to individual worker"s accounts online and online utility bill settlement system, when utility companies are ready(Asrat 2010). The agreement signed by three private commercial banks to launch ATM and POS terminal network, in February 2009 is welcoming strategy to improve electronic card payment system in Ethiopia. Three private commercial banks - Awash International Bank S.C., Nib International Bank S.C. and United Bank S.C. have agreed in principle to establish an ATM network called Fettan ATM network. If everything goes as planned, Fettan ATM will install over 140 ATM machines and over 340 POSs across Ethiopia. There will be one ATM at every branch of the consortium banks, all domestic airports serviced by Commercial service, shopping complexes and merchants. The agreement is the first significant cooperation between competing banks in Ethiopia, which others should be encouraged to follow as there is no single bank in Ethiopia that can afford to provide Extensive geographical coverage and access (Binyam 2009).The following table 2.1 provides the E-banking services, which are available in the Ethiopia banking industries at present.

2.1.5. Challenges of adopting E-banking in Ethiopia

According to Gardachew (2010) Ethiopian banking industry faces numerous challenges to adopt E-banking system and grab the opportunities presented by ICT applications in general. The Key Challenges for E-banking applications are: Low level of internet penetration and poorly developed telecommunication infrastructure: -

- Lack of infrastructure for telecommunications, Internet and online payments impede smooth development and improvements in e-commerce in Ethiopia. Most rural areas of the country, where the majority of small and medium businesses concentrated, have no Internet facilities and thus are unable to engage in e-commerce activities.
- Lack of suitable legal and regulatory framework for e-commerce and e-payment:- Ethiopian current laws do not accommodate electronic contracts and signatures. Ethiopia has not yet enacted legislation that deals with e-commerce concerns including enforceability of the validity of electronic contracts, digital signatures and intellectual copyright and restrict the use of encryption technologies.
- Inadequate banking system.
- Political instabilities in neighboring countries: - Political and economic instabilities in Somalia, Southern Sudan, and Eritrea are threatening traits that do not provide a very conducive environment for e-banking in Ethiopia. Political instabilities inevitably disturb smooth operations of business and free flow of goods and services
- High rates of illiteracy:- Low literacy rate is a serious impediment for the adoption of E-Banking in Ethiopia as it hinders the accessibility of banking services. For citizens to fully enjoy the benefits of E-Banking, they should not only know how to read and write but also possess basic ICT literacy.
- High cost of Internet:- The cost of Internet access relative to per capita income is a critical factor. Compared to the developed countries, there are higher costs of entry into the e-commerce market in Ethiopia. These include high start-up investment costs, high costs of computers and telecommunication and licensing requirements.
- Absence of financial institutions networks that links different banks (Banks are not yet automated):- Most of the banking-transactions currently taking place use credit and debit cards supplied by Visa and MasterCard. For conducting e-banking, the use of credit or debit cards is mandatory thus requiring the need for specialized systems which are not currently available.
- Frequent power interruption: - Lack of reliable power supply is a key challenge for smoothly running E-banking in Ethiopia.

2.1.6. Benefit of E-banking for Banks

It should be noted that E-banking can bring about various benefits for banks and their customers as well. It is obvious that cost savings, efficiency, gaining new segments of customers, improvement of the bank's reputation and better customer services and satisfaction are primary benefits to banks (Jayawardhena & Foley, 2000). In addition, Jayawardhena & Foley (2000) noted that setting up a specialized E-banking infrastructure costs about US $1 to $2 million, which is much lower than setting up a banking branch. In addition, the authors conclude that costs for running a traditional bank account for 50% to 60% of its revenues.

Under the view of Robinson (2000), relevant costs for conducting a banking transaction via online are much lower than via a brick and mortar branch. Moreover, Sheshunoff (2000) contends that one of the most important factors influencing the adoption of E-banking by banks is the need to build up strong barriers to customer exiting. Under the view of the author, once customers become familiar with the utilization of full service E-banking, it is unlikely that they will change to another financial institution. Such an argument can be supported by the consumer behavior theory that switching costs are often very high in terms of time and efforts by consumers. Finally, the author emphasizes that the implementation of E-banking can bring about many competitive advantages for banks in today's highly competitive banking market.

A research on E-banking has been carried out in Denmark by Mols (1998). The author argues that E-banking can play an important role in enhancing cross-selling and price differentiation. E-banking can make favorable conditions for banks to provide customers numerous services 24 hours a day and 7 days a week. E-banking can improve customer satisfaction with the bank due to the fact that it makes customers less price sensitive, and improve their intention to repurchase, and more loyalty to the bank via providing more positive words of mouth about the bank than other bank customers.

2.1.5. Benefit of E-banking for Customers

It should be noted that E-banking is not only brings about benefits to banks but also to their customers. Thanks to the emergence of the Internet, banking transactions are no longer limited to time and geography. It is very easy for consumers throughout the world to access to their bank

accounts 24 hours per day and seven days a week. Customers can enjoy a variety of services, especially services which are not provided by traditional bank branches (Pham 2010).It is argued that one of the greatest benefits that E-banking brings about is that it is not expensive or even free for customers to utilize E-banking products/services. However, some people believe that prices appear to be one factor that is impedimental to the diffusion of E-banking (Sathye 1999). The price debates often revolve around geographical differences and disparities between costs of Internet connections and telephone call pricing. It has also been believed that E-banks have been changing to respond to customers" increasingly changing demands (Pham 2010). There has been a tendency that customer don't want to travel to or from a bank branch to conduct some banking transactions. In other words, they want to utilize E-banking to save time and money. E-banking can bring about convenience and accessibility, which will have positive effects on customer satisfaction and loyalty (Pham 2010). It is totally possible for customers to manage their banking transactions whenever they want and to enjoy improved privacy in their interactions with the bank. In addition, customers can enjoy more benefits at lower cost levels by utilizing E-banking (Mols, 1998). It is contended by Turban (2008), that E-banking is really beneficial to customers in terms of cost savings, no limit on time and space, quick response to customer complaints, and better services/products. Such benefits are believed to elevate customer satisfaction.

2.2. Theoretical framework to adopt E-banking system.

Many researchers have been used different frame works in the study of adopting new technological innovation. Among frameworks that have been developed based on the past studies includes, the Technology-organization-Environment framework (TOE) (Tornatzky & Fleischer, 1990),which identifies three basic Factors for the adoption of technological innovation, i.e., technological factors, organizational and environmental factors.

2.2.1 Technology – organization – environment (TOE) framework

Tornatzky and Fleisher propose TOE framework for studying the likelihood of adoption success of technology innovations. This framework is a comprehensive and well received framework in

the context of innovation adoption by organizations and has been used in many studies (Salwani, et al, & Ellis 2009; Chang et al 2007, Zhu & Kraemer, 2006).

According to Tornatzky and Fleischer (1990), technology adoption within an organization is influenced by factors pertaining to the technological context, the organizational context, and the external environment. Based on this, the researcher is going to adopt the TOE framework to summarize possible key factors affecting E- banking adoption in Ethiopian banking industry.

2.2.1.1 Technological factors

The technological factor refers to adopter's perception of E-banking attributes. Typical characteristics of technology considered in technology adoption studies are based on the assumption of Roger's diffusion of innovation (Rogers, 2003), Which include relative advantages (perceived benefits), and relative disadvantages (perceived risks).While the organizational factor refers to the organization's characteristics that influence its ability to adopt and use of E-banking system.

2.2.1.2 Organizational factors

The organizational factor refers to the organizations characteristics that influence its ability to adopt and use of E-banking system. The organizational factors that have been mostly cited in literature include: Information Technology (IT) users' community; organizational structure; firm's process; firm size; technological capabilities of the organization's members; the technological and financial resources available; process of selecting and implementing the IT; management backing and support for the project (Harrison, 2012).

2.2.1.3 Environmental factors

The environmental factor refers to the external environment in which an organization operates and its condition for supporting the development of E-banking services. For each context,

various factors have been identified from the literature but only those that are considered relevant for E-banking adoption are included in the framework.

2.2.2 Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) was introduced by Davis (1986) quoted in Davis et al., (1989). Technology acceptance model is an adaptation of Theory of Reasoned Action (TRA), developed to specifically deal with modeling user acceptance of information systems. As compared to TRA, Technology Acceptance Model is significantly less general. The model was developed to particularly explain the computer usage behavior. But since, TAM includes findings collected from over a decade of Information System (IS) research, so it is particularly well-suited for modeling computer acceptance.

The Technology Acceptance Model (TAM) defines the casual relationship between perceived usefulness, ease of use, system design features, attitude towards using and actual usage behavior. In general, an informative representation of the mechanisms by which design choices influence user acceptance is provided by TAM. Hence, Technology acceptance model is useful in applied contexts for forecasting and evaluating user acceptance of information technology (Davis, 1993).

According to Technology Acceptance Model (TAM), perceived usefulness (PU) and perceived ease of use (PEOU) are two key beliefs that are mainly relevant for computer acceptance behavior. Theory of Reasoned Action (TRA) is used by TAM as a theoretical basis to specify causal association between these two key beliefs i.e. PU and PEOU. Perceived usefulness (PU) is defined as the degree to which a potential user thinks that using a particular system would increase his/her job performance. The term usefulness is derived from the word 'useful', which means the advantage of using particular IS. Whereas, perceived ease of use (PEOU) is defined as the degree to which a potential user thinks that using a particular system would be free of effort. The word 'ease' means, freedom form difficulty, hardship or effort. In short, ease of use means 'user-friendliness' of IS (Davis, 1989).

2.2.3 Theory of Planned Behavior (TPB)

TPB is developed originally based on the theory of reasoned action (TRA) which explains almost any human behavior. In predicting and explaining human behavior across various application contexts, it has been proven successful. According to TRA, a person's behavioral intention guides his actual behavior of performing some certain action and where subjective norm and attitude toward the behavior determine the behavioral intention (Liao et al., 2007). According to Ajzen (1991) quoted in Liao et al., (2007, p. 2809), "behavioral intention is a measure of the strength of one's willingness to try while performing certain behaviors". As in the original model of TRA, there are some limitations when dealing with behavior for which there is incomplete volitional control of people. Therefore, TPB is proposed to eliminate these limitations; and in fact, TPB differs from TRA because of the addition of perceived behavior control, which potentially effects behavioral intention.

According to Ajzen (1991), the theory of planned behavior proposes three independent determinants of intention which are attitude towards the behavior, subjective norm and perceived behavioral control. Attitude as defined by Fishbein and Ajzen (1975) quoted in Liao et al., (2007, p. 2809), is "the degree of one's favorable or unfavorable evaluation of the behavior in question".

The attitudes are developed reasonably from one's beliefs about object of the attitude. Subjective Norm refers to "the perceived social pressure to perform or not to perform the behavior" (Ajzen, 1991 quoted in Liao et al., 2007, p. 2809). It can be said that it is related to the normative beliefs about other people's expectations on either to perform or not to perform the behavior. Perceived behavioral control refers to ''people's perception of ease or difficulty in performing the behavior of interest" (Ajzen, 1991 quoted in Liao et al., 2007, p. 2809) and is assumed to reflect past experiences as well as the predicted difficulties and barriers. The construct of the perceived behavioral control in the TPB is added to cope with the situations in which people may lack the complete volitional control over the behavior of interest. Perceived behavioral Control is directly connected to the beliefs of the control factors that can facilitate or hinder the performance of the behavior (Ajzen, 2002 qouted in Liao et al., 2007). Control factors can be referred to as the internal or external constraints where internal constraints are related to self-efficacy and external constraints to the environment (Ajzen, 1991 quoted in Liao et al., 2007).

2.2.4 Theory of Reasoned Action (TRA)

The theory of reasoned action (Ajzen&Fishbein, 1980; Fishbein&Ajzen, 1975 quoted in Belleau et al., 2007) is based on the assumption "that individuals are rational and make systematic use of information available to them". According to theory of reasoned action, behavioral intention (BI) of an individual is a measure of the strength of one's intention to perform a specified behavior. BI is determined by two factors: 1) Attitude towards the behavior (AB), which is a function of beliefs (bi) that performing the behavior possesses certain attributes and the evaluation of those beliefs (EI) 2) Subjective Norm (SN), which is the perception of social groups i.e. what specific individuals or groups think that a person should or should not perform (Belleau et al., 2007). "An individual's Subjective Norm (SN) is determined by a multiplicative function of his or her normative beliefs (NBI), i.e., perceived expectations of specific referent individuals or groups, and his or her motivation to comply (MCI) with these expectations" (Fishbein and Ajzen, 1975, p. 302 quoted in Davis et al., 1989). Apart from the above mentioned factors, Ajzen and Fishbein (1980) quoted in Belleau et al., (2007) mentioned that some external variables might also have influence on behavioral intention, for instance, demographics, traditional attributes towards targets and personality traits. Some researchers have proposed additional external variables, which could be included in the model for predicting the behavior. Those variables are: past behavior, past experience or involvement (Bagozzi, Wong, Abe, &Bergami, 2000; Bunce &Birdi, 1998; Shim et al., 1989 quoted in Belleau et al., 2007).

According to Fishbein and Ajzen (1975) quoted in Sheppard et al., (1988) "a behavioral intention measure will predict the performance of any voluntary act, unless intent changes prior to performance or unless the intention measure does not correspond to the behavioral criterion in terms of action, target, context, time-frame and/or specificity". TRA model predicts consumers' intention and behavior very well. Armitage and Conner (2001) quoted in Belleau et al., (2007); state that behavior that is comparatively straightforward i.e. under volitional control can be predicted adequately by theory of reasoned action. As it is understood that an intention to buy a product is volitional and few constraints are associated with it, so the usage of theory of reasoned action can lead to valid prediction of purchase intention. However, there is a constraint associated with the TRA model regarding the distinction between a goal intention and a behavioral intention, which has also been acknowledged by Fishbein and Ajzen. The limitation is

that they established their model to cope with behaviors, for example, taking weight loss pill, applying for a loan or purchasing a new car; but not with outcomes that result from behaviors, for example, losing 10 pounds, getting a loan or owning a brand new car. Moreover, only those behaviors are dealt by model that is under an individual's volitional control. The conditions of the model can't be fulfilled, whenever the performance of some action needs resources, knowledge, skills or environmental hurdles need to be overcome (Sheppard et al., 1988). In this study, Technology-organization-environment framework was used to have a more precise forecast on the challenges of adopting and developing E-banking technology in Ethiopian banking industry.

2.3 Empirical literature

Similarly the study of Yang (1997) on the, security of Electronic banking "aimed to identify the challenges that oppose electronic banking, which are the concerns of security and privacy of information suggests that solutions to the security issues require the use of Software-based systems or hardware-based systems or a hybrid of the two. These software based solutions involve the use of encryption algorithms, private and public keys, and digital signatures to form software packets known as Secure Electronic Transaction used by Master Card and Pretty Good Privacy. Hardware-based solutions such as the Smartcard and the Me Chip provide better protection for the confidentiality of personal information. Software-based solutions have the advantage over hardware-based solutions in that they are easy to distribute and are generally less expensive In Laukkanen (2008) research, risk is considered as the most intense barrier and the greatest concern in the adoption of Internet Banking. However, in this study consumers feel human errors by themselves could cause a threat to their financial services For example, losing their Personal identification number (PIN) codes and it may get it to the wrong hands and result in crime or theft. A higher determinant of resistance appears to be the risk related to the individual's perceived ability to use the innovation successfully, i.e. self- efficacy" Laukkanen (2008).

Sathye (1999) suggest that banks use positive publicity to its customers to help ease the response from customer on security. One of the major banks in Australia has taken responsibility in undertaking losses for any unauthorized use, with exception of certain circumstances. However,

in an empirical investigation in Turkey by Polatoglu and Ekin (2001) states that Internet Banking services introduced by large, well – known and trusted banks, because customer perceived security risk in these banks is assumed to be decreasing significantly. On the other hand the risk factor is a barrier to corporate customers of banks as well.

The study of Aghdassiet al (2007) on "Association between strategic values and E-banking adoption in Iranian banks" attempts to understand strategic value of E-banking for Iranian banks and examine the causal effect of perceiving E-banking as a value and its adoption. The researchers propose an E-banking adoption model that is identifying five factors that have been found to be influential in the perception of strategic value of IT: performance support, operational support, managerial productivity, and strategic decision aids. They also identified

eight factors that influence electronic banking adoption: organizational readiness, infrastructure readiness, external dependency, intangible pressure, persuasive pressure, perceived ease of use, and perceived usefulness. Data are collected via a questionnaire- base survey from Decision maker unit of Iranian Banks. In order to test the model, a statistical analysis was conducted in two stages The first step employed factor analysis to measure whether the number of factors and loadings of items involved in the two main constructs (perceived strategic value and adoption) conform to the proposed model, canonical analysis was utilized in the second step in order to explore how the perceptions of strategic value influence the decision to adopt E-commerce. The finding of their study indicate that in a developing country like Iran and a big industry like banking, although the items of the adoption factors model are applied, the story is a bit different. In Iran the E-commerce adoption especially E-banking adoption is in its beginning stages and still there are lots of gaps. These gaps could be technological, economical, socio-cultural, geopolitical and other gaps. Also the result of their study expressed, that banks managers' perception through E-commerce is very positive and effective in their adoption trend.

Some related studies are conducted by different researchers in different parts of the world. However, there are limited numbers of studies conducted in Ethiopia on the adoption of technological innovation. Specifically, Gardachew (2010) conducted research on the opportunities and challenges of E-banking in Ethiopia. The aim of his study was focused on analyzing the status of electronic banking in Ethiopia and investigates the main challenges and opportunities of implementing E-banking system. The author conducted a survey on the existing

operating style of banks and identifies some challenges of using E-banking system, such as, lack of suitable legal and regulatory frame works for E-commerce and E- payments, political instability in neighboring countries, high rates of illiteracy and absence of financial networks that links different banks.

According to Gardachew (2010), Opportunities offered by ICT through e-learning programs and Commitment of the governments on development of ICT infrastructures is considered as drivers of using E-commerce and E-payment systems. Wondwossen and Tsegai (2005) also studied on the challenges and opportunities of E-payment in Ethiopia; their objective was studying of E-payment practices in developing countries, Africa and Ethiopia. The authors employs interview and on site observation to investigate challenges to E-payment in Ethiopia and found that, the main obstacles to the development of E-payments are, lack of customers trust in the initiatives, Unavailability of payment laws and regulations particularly for E-payment, Lack of skilled manpower and Frequent power disruption.

According to Wondwossen and Tsegai (2005), an adequate legal structure and security framework could foster the use of E-payments, which is contradicting with the finding of the previous study. On the other hand the study conducted by Daghfous and Toufaily (2007) on the success and critical factors in adoption of E-banking by Lebanese banks. The research was conducted on the factors that can lead to success the adoption of E-banking and the other factors that can constitute as barrier to its adoption, it focus on the organizational, structural and strategic factors which can accelerate or, on the contrary, slow the adoption of this electronic mode of distribution and communication by the banks, through analyzing the case of the Lebanese market. In order to test the validity of the theoretical framework, structured survey was used, interview questionnaire that was given to E-banking managers or to information technology managers of all the banks on the official list of institutions operating on the Lebanese market, with a total of 57 banks, 31 of them operate internationally and 26 are strictly local were used to gather data. The results of their study shows that the organizational variables (bank size, functional divisions, technical staff, technical infrastructure, perceived risks, decision makers`

international experience and mastery of innovation) are variables which exert significant impact on the adoption of E-banking, among the structural characteristics, the result revealed that internal technological environment of the bank is very important factors in determining the

adoption of E-banking, also the result shows that banks which are developing in the international scale are more likely to adopt E-banking innovations. Finally the result of the study indicate that extent of penetration of E-banking in the growth phase of an emerging market has an important correlation with the improvement of commercial performance.

2.5 Conceptual framework

Independent variables

Technological factor

➢ Perceived risks (relative disadvantage)
➢ Perceived benefits

Organizational factor

➢ Financial and human resources

Dependent variable

Adoption of e-banking system

Environmental factor

➢ Legal framework
➢ National ICT infrastructure
➢ Competitive pressure
➢ Government
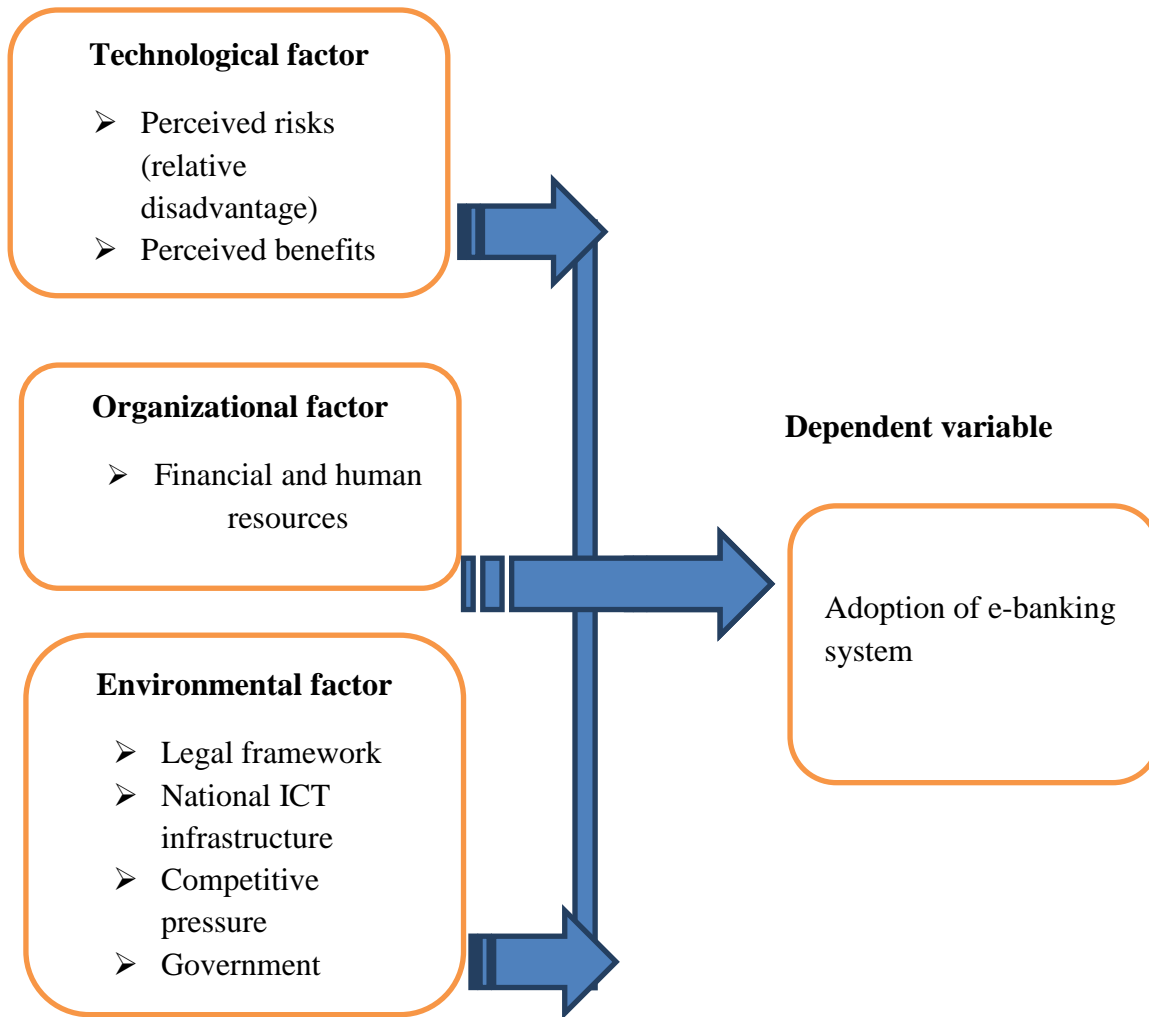
Figure 2.1 Technological- Organization –Environment framework

Source: Tornatzky and Fleischer, (1990)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the processes and techniques used in carrying out the study. It also gives a description of the respondents including information on the study population, the number of respondents and how they were selected. It also provides an outline of research design and the instruments for data collection. The methods adopted in the administration of the research instrument, data collection procedure, data analysis and measures used to ensure validity of the instrument used.

3.2 Research Design

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. In fact, the research design is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2004).

According to Robson (2002), the three purposes of conducting research are generally the following: explorative, descriptive and explanative. Explorative research is characterized as the seeking of new insights, the looking around, and the asking of questions or the bringing of some phenomenon into new light. Explanative research aims at gaining an explanation of a specific situation or problem, generally in the form of causal relationships. Finally, Descriptive research is a type of research that is mainly concerned with describing the nature or condition and the degree in detail of the present situation. Creswell (2003) stated that the descriptive method of research is used to gather information about the present or existing condition.

This study was focused on describing the current situation of the problem and answer the research questions which are in the form of ''what'', and to highlight the most important factors that can negatively or positively affect the adoption and development of E-banking in Ethiopia. Moreover, this research aims to explain the phenomenon and assess the current practice of E-banking. Therefore, Descriptive research is being used to achieve the research objectives.

3.3 Research Approach

In order to attain the objective of the study and answer the research questions, the researcher was adopted mixed research approach. The rationale of using a mixed approach is to gather data that could not be obtained by adopting a single method (Creswell, 2003). Hence, the basis of such approach helps to neutralize the limitations of applying a single approach in connection with the qualitative and quantitative nature of the research questions.

3.4 Population of the Study

In research methods, population is the entire aggregation of items from which samples can be drawn. The populations of the present study consist of 35 staff of the Abyssinia banks who worked in E-banking Department at head office. This is because Such adoption from perspective of customer has studied so many times and they are technical staff and have good knowledge of what customers are facing every day; sometimes better than the customer themselves.

3.5 Data Collection Method

According to Saunders et al. (2007), there are two approaches to collect data for a project and these are: primary data and the secondary data.

3.5.1 Primary Data

Primary data are first-hand information data collected specifically for the research project being undertaken (Saunders et al., 2009). It can be collected through observation, interviews, or the use of questionnaires (Saunders et al., 2009). They further argued that the questionnaire is one of the most widely used data collection techniques within the survey strategy. For this study, primary data were gathered through a questionnaire that was administered on the actual e-payment department staffs of the bank. .In addition, 5-point Likert scales, ranging from 1 (strongly disagree) to 5 (strongly agree) were adopted.

3.5.2 Secondary Data

Secondary data were obtained through the already existing literature, from journals, newspapers, text books and articles. We used the secondary data to validate the findings from analysis of primary data which was collected using questionnaires.

3.6 Data Collection Procedure

The consent of all respondents was sought before they were included in the study. At each staff category, convenient sampling was used to select respondents for the study. Each respondent was made to answer each question and then the appropriate answer ticked. Where the researcher is not sure of an answer, the researcher probed until answer provided is consistent. This procedure was repeated for each junior and senior staff respondents. To clear any doubts in the minds of respondents the purpose of the study was made known to respondents.

3.7. Ethical Consideration

The researcher treated all the information given by customers and kept confidentially without disclosing the respondent's identity and would not be used for any personal interest. Furthermore the questionnaires were distributed only to voluntary participants. Lastly, all secondary sources were quoted to keep the rights of ownership of all materials.

3.8 Reliability and Validity

3.8.1 Reliability

Reliability is the consistency of responses; the degree to which an instrument measures in the same way each time under the same conditions. Reliability is used to ensure internal consistency and to achieve high degree of homogeneity between questionnaire statements (Polit and Beck, 1985). We can compute reliability through different methods like test- retest reliability, internal consistency reliability, and equivalent forms reliability. In this research, we checked questionnaire reliability by choosing internal consistency reliability method. By using this method, we can measure the correlation between each item in the questionnaire and others. In addition, we do not need to perform more than one test, or to design two equivalents forms.

Likert scale questionnaires use Cronbach alpha (α) method for internal consistency reliability test. As Alhamdaniet. al. (2006) argued. Accordingly in this research paper cronbach's alpha was calculated for all statements in the questionnaire to test its reliability.

To measure the consistency of the Questionnaires, the reliability analysis was done using Cronbach's Alpha (α), the most common measure of scale reliability test. As indicated below in Table 3.1, below the value for Cronbachs Alpha (α) was 0.849 for all variables which exceed 0.70 the accepted value for Cronbachs Alpha (Field, 2009; Cohen and Sayag, 2010). In short nut, the responses generated for all of the variables used in this research was reliable enough for data analysis.

Table 3.1 Reliability Test

	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No of Items
Technological factors	.790	.842	5
Organizational factors	.713	.832	5
Environmental factors	.821	.893	9

3.8.2 Validity

Validity measures what the research tool is measure; it ensures that the research tool is measuring what researchers intend to measure or want to measure (Polit and Beck, 1985).

A pilot study was done with experts of e-banking to ensure that research tool can achieve the research purpose. The feedback from the pilot test was used to improve the readability and the quality of the questions in the instrument.

3.9 Data Analysis Method

In order to meet the stated research objectives, the collected data was analyzed based on the nature of the objective. Accordingly, the data collected via questionnaires was analyzed with descriptive statistics using statistical package for social scientists (SPSS) V. 20.0. Furthermore, qualitative research is fundamentally interpretative i.e. the researcher makes an interpretation of

the data. Thus, the data that was collected from the interview and reviews of documents were interpreted qualitatively. To sum, the analysis of quantitative data and interpretation of qualitative data combines to seek convergence among the results (Creswell, 2003).

3.10 Variables

3.10.1 Dependent Variable

The dependent variable in this research was the adoption of e-banking system. The researcher used the summative score technique for the questions in each factor for each participant. This is because Likert scale is the common summative scores (Balnaves and Caputi, 2001).

3.10.2 Independent variables
The independent variables selected for this research were: technological factors, organizational factors and environmental factors. Similarly with the dependent variable items, all the independent variables item was measured one- five point Likert-scale.

CHAPTER FOUR

PRESENTATION, INTERPRETATION AND ANALYSIS

4.1. Introduction

This chapter deals with the presentation, interpretation and analysis of data gathered from both primary and secondary sources. The chapter has seven sections. Section.4.1 presents introduction of this chapter, section 4.2 descriptive analysis, section 4.3 presents the result and discussion regarding the factors affecting the adoption and development of E-banking. 4.4 present the reliability analysis of the instrument.4.5 also provide the regression analysis.

4.2. Descriptive analysis

4.2.1 Response Rate

As it is discuss in the methodology part of this study, data collected by using different techniques were analyzed in this chapter by using descriptive approach. A total of 35 questionnaires were distributed to purposely sampled Abyssinia bank staffs& total number of the staffs was 36 who found in head office. Out of the total 35 questionnaires, 31 questionnaires were obtained (88% response rate). In addition to questionnaire, the researcher conducted an interview with only E-payment/IT managers for the reason that it was not well-situated to interview all bank managers; and reviews some bank documents regarding E-banking system.

4.2.2 Respondents profile

The study participants on survey questionnaire have different personal information; besides these differences they introduce different responses towards E-banking usage, and the factors that influence E-banking adoption. The following discussion shows these differences. The demographic profile of respondents, participated in this study was shown in table 1. as follows.

Table 4.1 Respondents' Profile

Variables	Grouping of variables	Frequency	Percentage
Gender	Male	24	77
	Female	7	23
Total		31	100%
Age	18-25	-	-
	26-35	17	54
	36-45	11	34
	46-55	3	11
	Above 55years	-	-
Total		31	100%
Education level	Diploma	-	-
	Degree	28	91
	Master	3	9
	Above master	-	-
Total		31	100%
Experience	1-3	7	23
	4-6	17	54
	7-10	4	14
	Above 10 years	3	9
Total		31	100%

Source; own survey 2018

The above Table 4.1 shows regarding gender of respondents 24 (77%) were Male and 7 (23%) were female. This implies that majority of respondents were male than female counterparts. concerning age category 17(54%) were between 26-35 years, 11(34%) were 36-45 years, 3(11%) was between 46-55 years old. This shows that respondents are matured enough to provide answers to survey questions. About educational level 28(91%) possess bachelor degree and 3(9%) have master's degree. From the data it is possible to conclude that 31(100%) of respondents have sufficient academic preparation to analyze the survey question to provide accurate response. Regarding the experience 17(54%) got 4-6 years, 4(14%) have 7-10 years and 3(9%) above 10 years so they are able to provide enough information for survey questions and they are able to respond accurately.

4.3. Factors affecting e-payment adoption

4.3.1. Technological factor

The issues raised in this study in relation with technological factor are the relative advantages (perceived benefit) the firm gained from adoption of E-banking system and the relative disadvantages (perceived risk) which hinder banking industries from the adoption of new technological innovations.

One of the basic factor a firm faces, while adopting technological innovation is the perceived risks. For example the study of Sohail and Shanmugham (2003) suggests that one of the factors in the adoption of electronic banking is fear of security risks. Moreover, all of the bank manager's participated in this study were asked whether security issue is raised with the use of technological facility in the banking industries, and all of them stated that security is the main concern that hinders our bank to use technological facilities. These were also supported by the survey result shown on table 4.2 below, as follows.

Table 4.2 Technological factor

	N	Mean	Std. Deviation
Customers fear risk to use ATM	31	4.00	.000
Lack of confidence with the security	31	4.00	.000
In the case of using mobile banking, ATM and others, security risk affect users decision to use the system	31	4.25	.447
Customers do not trust the technology provided by banks	31	3.50	1.155
Lack of trust is considered as barriers for the adoption of E banking system. Ethiopia.	31	3.50	.894
Grand mean		3.85	

The result presented in the above table 4.2, shows that, the respondents asked whether customers of banks fear risk to use ATM, and the descriptive statistics result gives mean of 4.00, that means the largest number of respondent were agreed on the issue, therefore fear of risk is one of the factor that hinder adoption of E-banking system in the country. Similarly the result shown on the above table revealed that lack of confidence with the security issue is considered as barrier for the adoption E-banking system, were mean value for the second question is 4.00. This result were consistent with the findings of Ghazi and Khalid (2012, p.9); Khalfan*et al* (2006) in which

all indicted that, technological barriers, such as security risk as hindrance factor for the adoption of E-banking.

In addition, the result shown on the above table indicated that lack of trust on the use of technological facility provided by bank is another factor that can hinder adoption of technological innovation by Ethiopian banking industries. Large number of respondents agreed with the idea that trust is one basic factor in the adoption of E-banking system which is mean score of 3.50. This result confirms the finding of Sathye (1999) which suggests; the greatest challenge among the electronic banking sector is winning the trust of customers in the issue of security or perceived security risk as a key inhibitor in the adoption of online banking.

4.3.2. Organizational factors

One of the basic issue related with organizational factor is, the availability of financial as well skilled human resource to implement the system. In this study costs related with the use of E-banking instrument and technical or managerial skills required to implement E-banking system were considered as organizational factors.

Table 4.3 Organizational factor

	N	Mean	Std. Deviation
Using electronic banking increases cost to do banking task	31	1.50	.516
Relatively using of Mobile to get banking service is expensive for customers	31	1.75	.447
Customers of our bank were not familiar with service provided though ATM, Internet banking, telephone and mobile phone	31	3.75	1.342
Lack of technical and managerial skills on the use of technological innovation.	31	3.00	1.033
Lack of skills to implement E-banking system	31	3.25	.856
Grand mean		2.70	

As one can see in above table 4.3 , regarding the cost incurred on the use of different E banking system like internet/online banking and mobile banking the largest number of respondents did not agreed with the idea which is mean value of 1.50. Similarly, the descriptive statistics result shows that, mean value for the second questions in the table above is 1.75. On the other hand the result presented on table above revealed that unfamiliarity with the service provided through

ATM, Internet banking, telephone and mobile phone by customers, Lack of technical and managerial skills on the use of technological innovation and Lack of skills to implement E-banking system are considered as factor for the adoption of E-banking system with lower mean value 3.75, 3, 3.25 respectively

4.3.3 Environmental Factor

Another factor which can affect the adoption of technological innovation in banking industry is an external environment: in this study four basic environmental factors are considered, these are legal frame works, national ICT infrastructure, competitive pressure and government support. The result obtained from survey, interview and literature regarding those four issues were presented in the following sections.

Table 4.4 Environmental factor

	N	Mean	Std. Deviation
Lack of legal frame works that enforce banking industries to adopt technological innovation	31	3.50	.894
Cross-country legal and regulatory differences will have impact on the adoption of new technological innovation in the banking sector.	31	3.25	.856
Using internet banking is difficult due to low internet access in Ethiopia	31	3.50	1.549
Internet connection was not good enough to perform online transactions in Ethiopia	31	3.75	1.693
Lack of available ICT infrastructure	31	3.50	1.549
Mobile banking services may not perform well because of network problems	31	4.25	.856
Lack of competition	31	3.25	.856
Lack of sufficient government support will affect customers' willingness to use technological innovation	31	3.50	1.155
Customers may not willing to accept E banking service	31	3.00	.730
Grand mean		3.50	

Electronic payments are not currently covered in Ethiopian legal system. Lack of such legal framework may thus hinder the introduction of cost effective modern electronic payment instrument such as ATMs, credit and debit cards, mobile/telephone/internet banking. Other policy initiative, which is currently under consideration, is the development of securities market,

particularly, that of long-term debt instruments (Getahun 2008). Similarly the study of Gardachew (2010) revealed that lack of legal frame work is one of the challenges for E-banking system in Ethiopia. In contrary, the study of Wondwossen and Tsegai (2005) revealed that an adequate legal structure and security framework could encourage the use of E-payments in Ethiopia. However, the result of survey presented in above table about legal framework on implementation of E-banking system revealed that lack of legal frame works and cross country legal and regulatory difference is considered as factors that hinder banking industries for the adoption of E-banking system in Ethiopia shown by mean score of 3.5 and 3.25 respectively.

Similarly, An interview conducted with one of the bank manager also prove that, Ethiopia does not have special rule on the use of E-banking system or it is not yet included in the banking regulation. Since there is no legal frame works on the adoption of technological innovation at central bank, Ethiopian banking industry cannot be enforced to implement E-banking system. So lack of legal frame work for the implementation of E-banking system is one basic barrier for Ethiopian banking industry. The finding of this study were also consistent with the study of Tan and Ouyang (2002), they found that lack of legislation is an initial barrier that influence E-banking adoption in china.

The above table 4.4 shows that ICT infrastructure in Ethiopia for internet access is not sufficient to use online banking service, were the mean value for the first question is 3.50. Similarly, the mean value of the questions is 3.75, which indicated that lack of available ICT infrastructure in the country inhibits to use E-banking system. Similarly, an interview script received from the E-payment manager indicates, the poor quality of telecommunication network service is a major obstacle for all banks in Ethiopia to effectively deliver some services such as internet banking, mobile banking and others.

As it is depicted on the above table 4., respondents were asked whether, lack of government support is an inhabiting factor for the adoption of E-banking in Ethiopia and the mean value gives 3.50 and 3.00 respectively. Most of respondent not agreed with the idea that lack of government support affect adoption of E-banking system in Ethiopia. On the other hand an interview conducted with IT managers /E-payment managers confirms that, Ethiopian government were doing on improvement of national infrastructure, it will encourage our bank to adopt different technological innovation.

4.4. Correlation Analysis

As depicted in Table 4.5, below the correlation between the independent and dependent variables were not high. This indicates absence of Multi collinearity problems among the variables. However, there were strong correlations between the dependent variable; adoption of E-banking (AEB) and all the independent variables except Technological Factor (TF). Organizational (OF) and Environmental factors (EF) has significant and positive relation with adoption of E-banking (AEB)

Table 4.5 Pearson's Correlations

	Adoption of E-banking (AEB)	Technological Factor (TF)	Organizational Factor (OF)	Environmental Factor (EV)
AEB	1			
TF	-.068	1		
OF	.760**	-.043	1	
EF	.933**	-.049	.475	1
**. Correlation is significant at the 0.01 level (2-tailed).				

4.5. Regression analysis

Regression analysis is a statistical tool for the investigation of relationships between variables. As with correlation, regression is used to analyze the relation between two continuous (scale) variables. However, regression is better suited for studying functional dependencies between factors. The term functional dependency implies that X [partially] determines the level of Y. In addition, regression is better suited than correlation for studying samples in which the investigator fixes the distribution of X (Alan O.(2009); Jim. H. (2005). However, in this study, multiple regression analysis was carried out to get the predictive value of the constructs considered.

The study conducted a multiple regression analysis for the independent variables and the dependent variable. Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (adoption of E-banking) that is explained by all the three

independent variables (Technological Factor, Organizational Factors and Environmental Factor). As indicated in the model summery (Table 4.6) the appropriate indicators of the variable used to identify the AEB were explore. That is, the value of R square used to identify how much of the variance in the dependent variable (AEB) identified by the model. The larger the value of R square, the better the model is. The overall contribution of Technological Factor, Organizational Factors and Environmental Factor accounted for 79.9% (adjusted R2 = 0.797). The rest 20.3% represents other independent variables not included in this study. Therefore, further research should be conducted to investigate the other (20.3%) factors influencing adoption of E-banking in the Abyssinia bank.

Table 4.6 Model Summary

Model	R	R Square	Adjusted R Square
1	.920^a	.846	.797
a. Predictors: (Constant), EF, TF, OF			

The ANOVA statistics in Table 8 shows the significance of the model by the value of F statistics (P =.000) and F = 27.431, greater than the F critical (value = 2.27), which implies that there were strong relationship between the predictors and the outcomes of the regression variables and are the best fit for the model to predict.

Table 4.7 ANOVA^b

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.169	3	1.056	27.431.	.000^a
	Residual	.000	12	.000		
	Total	3.169	15			

a. Predictors: (Constant), EF, TF, OF

b. Dependent Variable: AEB

In any regression model, the +ve or −ve sign of beta (β) shows the effect (increase or decrease) of the independent variables coefficients over the independent variable. And as shown in Table

4.8 below, beta sign of all the independent variables shows the positive effect of the predicting independent variables. That means any proportional increase in the independent variables lead to a proportional increase in the dependent variable.

Table 4.8. Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.128	.000		2.206E7	.000
	TF	-.075	.000	-.015	-5.699E6	.000
	OF	.272	.000	.409	1.414E8	.000
	EF	.501	.000	.738	2.552E8	.000

a. Dependent Variable: AEB

From table 4.8 It can be deduced that adoption of e-banking is individually and collectively predicted by Technological Factor (β= -0.075), organizational factor (β= 0.272), environmental factor (β= 0.501). This implies that environmental factor is the dominant factor that influences the adoption of e-banking system. In contrast, technological factor has negative effect on the adoption of e banking. There for the bank should give more focus on environmental and organizational factors.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION.

5.1 Introduction

This chapter presents the summary of findings, conclusion, recommendation and areas of future study.

5.2 Summary of Findings

Guided by the technology-organization–environment (TOE) framework. TOE, is classified in to three factors to determine barriers for the adoption of E-banking system. The technological barriers, identified in this study were security risk and lack of trust on the technological innovation used by banking industries. The finding identified under technological factor were also consistent with other studies on technology adoption in different countries, Ghazi and Khalid (2012) & Sathye (1999), both of them found that security risk is the major barrier for the adoption of E-banking system.

In the case of organizational factor, financial cost as well as human resource is considered, in this study financial cost were not considered as determinants for the adoption of E-banking in Ethiopia and it is consistent with the finding of Rasoulina (2006). On the other hand lack of technical and managerial skills to use and implement the system is considered as factor for the adoption of E-banking in the country.

Most factors to E-banking adoption identified in this study were come from external Environments; specifically those are lack of legal framework regarding E-banking system at national level, lack of ICT infrastructure, and Absence of competition between local and foreign banks. Interestingly, lack of Government support was not taken as barriers for the adoption of E-banking system in Ethiopia.

5.3 Conclusion

This study aims at assessing the factors that influence adopting E-banking in Abyssinia bank. To achieve the proposed objective basic frame works were used, i.e. Technology-organization-Environment (TOE) .On the other hand both quantitative as well as qualitative (mixed) research approach was employed in the study.

- E-banking system, such as ATM, mobile banking, internet banking and others were not well adopted by Abyssinia bank. This is due to low level of ICT infrastructure and lack of legal frame works at NBE, which can initiate banking industry to implement the system.

- Result of the study also shows that security risk and lack of trust on the use of technological adoption are other major factor for the system. The level of security risk associated with E-banking product or service, such as ATM, internet banking, mobile banking and others, pose different challenges to different banks. Improvements are required to ensure client confidence.

- Lack of competition among local and foreign banks is also another challenge for the adoption of E banking in the country. Because if there was a computation among the two banks highly developed and technological product or service were bee seen but not it lacks.

- Technical and managerial skills available in the banks for the adoption of E-banking are also limited. This is influencing the choice of technology in the banks. On the other hand, the study reveals that the benefits of technological innovation are well known to the banks and represent a formidable force to drive adoption of the system. In general perceived Ease of use is one of the basic benefits for E-banking, in which it enables bank staff to perform banking activities in a simple way. The other driving force for the adoption of the system is perceived usefulness, in which, it is used for time saving and cost reduction. This and the other benefit identified in the study were considered as a very great potential for banks to improve their public image.

- In general, the findings of this study offer additional insights into the current E-banking adoption situation and its implications for E-banking growth in Ethiopia as an example of a developing country. Furthermore, the understanding of the barriers to E-banking

adoption identified in this study may help to identify the best course of actions to promote its

5.4 Recommendation

E-banking system is a new financial evolution in Ethiopia, but it's an important issue, because it has a great impact on the whole banking system, at the same time it's difficult and need a lot of efforts to be adopted and accepted by the banking industry therefore the concerned party need a lot of efforts to succeed. Based on the above conclusion, the researcher recommends the following points:

- In order to successfully facilitate E-banking adoption in Ethiopia, national bank of Ethiopia, (NBE) needs to establish a clear set of legal frame works on the use of technological innovation in banking sector.
- For the successful implementation of E-banking system ICT infrastructure, is a major prerequisite, so government, should support banking sector by investing on ICT infrastructure development.
- In order to survive, Ethiopian banking industry need to move away from traditional bases of retail bank competition to a new technology based form of competition by focusing on cost reduction, customer retention, awareness, credibility, security, ease of use, and wider scope of products and services.
- To exploit the benefit of E-banking system, banking industry operated in Ethiopia needs to familiarize their customers with the processes and benefits of the system.
- Banks should pay special attention to deliver service to customers by using E banking system, which can easily be accessible.

REFERENCE

Abiy, D 2008, capital, weekly newspaper, March, 17, 2008. Access Capital 2010, Banking Sector Review, investing in Ethiopia.

Aghdassi, M. Persson, L., & Ghasemi, R 2007. „Association between strategic values and E- banking adoption in Iranian banks', research paper, industrial marketing and purchasing group, http://www.impgroup.org/ uploads/papers/4803.doc.

Ahmed, H 2011, `E-banking Adoption Model in Palestine", MA thesis, An- Najah National University, Palestine.

Alaghe band, P 2006, Adoption of electronic banking services by Iranian Customers, MA thesis, Lulea University of Technology, http://www. epubl.ltu.se/1653-0187/2006/49/LTU-PB-EX-064SE.pdf Viewed 10 September 2011,

Alemayehu, G and Jacqueline, I 2011, Remittance Market in Africa, Ethiopian case, book chapter, 113-132

Alhamadni, M, Aljaderi, A, Qandelji, A, Bani Hani, A & Abu zeneh, F 2006, Research Methodology; First Book: The basics of scientific research, 1st Edition, Amman Arab University for Graduate Studies.

Alsabbagh, I and Molla, A 2004, `Adoption and use of internet banking in the Sultanate of Oman", Journal of internet banking and commerce. 9(2)

Ajzen, I., 1991. The Theory of Planned Behavior. Organizational Behavior and Human Decision Processes [e-journal] 50, pp. 179–211

Andersen, K and Dedrick, J 2003, "Governance initiatives creating a demand 83 Driven E-commerce approach' The case of Denmark. The information society, 19(3): 98-105.

Asrat, S 2010, Reporter, weekly newspaper Available at: http//:www.addisfortune.com/archive/2011 /January/week4/, retrived September 14, 2011.

Balachandher, K, Santha, V & Norhazlin, I 2010," Electronic Banking in Malaysia: A Note on Evolution of Services and Consumer Reactions", International Journal of Business and Management Science.

Banji, O & Catherine, A 2004, `Internet Access in Africa: Empirical Evidence from Kenya and Nigeria", 21(1): 67-81.

Binyam, T 2009, Daily Monitor, February, 20, 2009

BOA, Annual Report, available at: http://www.abyssinia.com

Booz, R, Allen, G & Hamilton, L 1997,`Internet banking", A global study of potentials. Booz, Allen and Hamilton Inc. New York, NY.

Chang, et al 2007, "Factors affecting the adoption of electronic signature: Executives Perspective of hospital information department", Decision Support Systems, 44(4):350-359.

Chong, S & Pervan, G 2007, Factors Influencing the extent of deployment of electronic commerce for small business and medium sized enterprises", Journal of Electronic commerce in organizations, 5(1):22.

Cox, D 1967, `The audience as communicators", Graduate School of Business Administration, Harvard University, Boston, MA thesis, 172-87.

Creswell, W 2003, Research Design: Qualitative, Quantitative and Mixed Approaches," 2nd edition. Sage publication, California.

D "Souza, E 2002, How Well Have Public Sector Banks Done? Economic and Political Weekly, 2(9): 867-870.

Daghfous, N and Toufaily, E 2007, The adoption of E banking by Lebanese banks: success and critical factors, research paper, University du Quebec a Montreal Retrieved from:

Davis, F & Warshaw, P 1989, `User Acceptance of Computer Technology: A Comparison of Two Theoretical Models", Management Science 35(8): 982- 1003.

Davis, F 1986, A Technology Acceptance Model for Empirically Testing New 84 End-User Information Systems: Theory and Results, Boston, MIT., Phd thesis.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R., 1989. User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. Management Science [ejournal] 35 (8), pp. 982-1003.

Davis, F.D., 1993. User acceptance of information technology: system characteristics, user perceptions and behavioral impacts. Int. J. Man-Machine Studies [e-journal] 38, pp. 475-487

Davis, F.D., 1989. Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. MIS Quarterly [e-journal] 13 (3), pp. 319-340

De Coster, J 2004, Data Analysis in SPSS, http://www.stat- help.com/notes.html Viewed, January 24, 2012

Efendioglu, A and Yip, F 2004, „Chinese culture and e-commerce: An Exploratory study Interacting with Computers", 16:45-62.

Eldabi, T 2002, `Quantitative and qualitative Decision Making Methods in Simulation Modelling", Management Decision, 40 (1):64-73

Ellis, J 2009, „Open source software adoption by South African SMEs: Barriers and Enablers", In SACLA. Mpekweni Beach Resort, South Africa.

Forster, T 1998, `Industrial Marketing Communication: An Empirical Investigation on the use of Marketing Communication Tools" Licentiate Thesis, Lulea University of Technology.

Furst, K &Nolle, D 2002, „Internet banking: developments and prospects", working Paper from office of the comptroller of the currency, administration of National banks.' http://www.occ.gov/ftp/workpaper/wp2000- 9.pdf, viewed 12 September 2011

Gardachew, W 2010, ` Electronic -banking in Ethiopia: practices, opportunities and Challenges", Journal of internet Banking and commerce.

Polit, D., & Beck, C. (1985). Nursing Research: Principles & Methods, 7th Edition, Lippincott, Williams& Wilkins, United States of America.

Sathye M. (1999). "Adoption of internet banking by Australian consumers: and empirical Investigation", International Journal of Bank Marketing, Vol. 17, No. 7, pp. 324-334, MCB University Press.

Sheppard, B.H., Hartwick, J. and Warshaw, P.R., 1988. The Theory of Reasoned Action: A Meta-Analysis of Past Research with Recommendations for Modifications and Future Research. Journal of Consumer Research [e-journal] 15 (3), pp. 325-343.

APPENDIX A
ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES
MASTERS OF BUSINESS ADMINISTRATION (MBA) PROGRAM
QUESTIONNAIRE TO BE FILLED BY E-BANKING CUSTOMERS

Dear respondent,

The objective of this Questionnaire is to gather firsthand information that will help to assess the factors affecting the adoption of E-banking in Ethiopian Banking industries case of Abyssinia bank. This study is undertaken as a partial requirement for the completion of Masters of Business Administration (MBA) program.

All data and information that will be gathered through this Questionnaire will be used for the sole purpose of the research and remains confidential. Therefore, you are kindly requested to respond to the questions with utmost good faith, freely and to the best of your knowledge. There is no need to write your name on the Questionnaires.

Thank you in advance for your time and kind cooperation

Meron Workagegn

Email: merrywork12@gmail.com

Mob. 0922 59 11 12

Section I, general profile

1. **Gender**   **male** [   ]   **female** [   ]

2. **Age**   **18- 25** [   ]   **26-35** [   ]   **36-45** [   ]

        46-55 [   ]   **above 56** [   ]

3. **Education level**   **diploma** [   ]   **degree** [   ]

        Master [   ]   **above master** [   ]

4. **Experience**   **1-3years** [   ]   **4-6** [   ]

        7-10 [   ]   **above 10 years** [   ]

Section II. Questions about factor affecting the adoption of E-banking in Ethiopia

Instruction: Below are lists of statements pertaining to Adoption of E-banking. Please indicate whether you agree or disagree with each statement by ticking ($\sqrt{}$) on the spaces that specify your choice from the options that range from ""'strongly disagree" to „"strongly agree" .Each choices were identified by numbers ranged from 1 to 5. Note: SA- Strongly Agree, A- Agree, DA- Disagree, N- Neutral, SD- Strongly Disagree

	Items	SD	D	N	A	SA
Technological factor						
1	Customers fear risk to use ATM					
2	Lack of confidence with the security					
3	In the case of using mobile banking, ATM and others, security risk affect users decision to use the system					
4	Customers do not trust the technology provided by banks					
5	Lack of trust is considered as barriers for the adoption of E banking system. Ethiopia.					

	Organizational factors					
6	Using E-banking increases cost to do banking task					
7	Relatively using of Mobile to get banking service is expensive for customers					
8	Customers of our bank were not familiar with service provided though ATM, Internet banking, telephone and mobile phone					
9	Lack of technical and managerial skills on the use of technological innovation.					
10	Lack of skills to implement E-banking system					
	Environmental factors					
11	Lack of legal frame works that enforce banking industries to adopt technological innovation					
12	Cross-country legal and regulatory differences will have impact on the adoption of new technological innovation in the banking sector.					
13	Using internet banking is difficult due to low internet access in Ethiopia					
14	Internet connection was not good enough to perform online transactions in Ethiopia					
15	Lack of available ICT infrastructure					
16	Mobile banking services may not perform well because of network problems					
17	Lack of competition					
18	Lack of sufficient government support will affect customers' willingness to use technological innovation					
19	Customers may not willing to accept E banking service					

Section III, Questions for drivers for adopting E-banking

	Items	SD	D	N	A	SA
Perceived usefulness from operational cost saving						
1	Minimize customer service cost					
2	Decrease transactional cost.					
3	Reduces human resource requirement.					
Time saving and convenience						
4	Convenient, in terms of time saving.					
5	Convenient to use at any time and place					
6	Reduces physical presence of customer					
7	Facilitates quick response					
8	Enables users to accomplish activities more quickly and easily					
9	Convenient life style to users.					
10	Easier way to operate banking transactions					
Perceived Ease of Use						
11	Easier way to conduct Banking transactions					
12	Our customer can use e-banking Technology simply anytime and anywhere banking service.					
13	Helps employee give services in easy way.					
14	Customers to complete banking activities easily and more quickly.					

APPENDIX B

INTERVIEW PART
Section I. general information for interviewee

1. Sex   male   female

2. Age   25-35   36-45   46-55   above 56

3. Education level   diploma   degree master above master

4. Experience   1-3   4-6   7-10   above 10 years

Section II. Interview questions designed for the E-banking management

1. What type of Electronic banking service do you provide? ATM, Internet banking, mobile banking or others? Please specify

   ……………………………………………………………………………………………

   ……………………………………………………………………………………………

2. What are the basic challenges of adopting and developing new technological innovations like ATM, internet banking and mobile banking in your institution?

   ……………………………………………………………………………………………

   ……………………………………………………………………………………………

   ………………………..

3. What are the benefits your bank gained from the adoption and development of E-banking system (ATM, POS and mobile banking system) in the delivery of service to customers?...

   ....

   ....

4. What are the key factors that push your bank to adopt E-banking system?

   …………………………………………………………………………………………

   …………………………………………………………………………………………

   ….

5. What are the existing opportunities in the country that initiates the adoption and development of E-banking technology?

....

....

6. Is there any legal frameworks at central bank to enforce banking industries to use Ebanking technology, such as ATM/debit card, telephone/mobile banking/internet banking?

………………………………………………………………………………………………
…………………………………..

7. Is there any special rule that guide banking industries in implementation of E-banking system? (NBE)

………………………………………………………………………………………………
…………………………………..

8. What sort of support would you expect from the government in relation to the E-banking improvement in Ethiopia?

....

....

9. Any suggestions regarding the adoption of E-banking service in the banking industry?..

....