

...Factors affecting the practice of electronic banking services in case of commercial bank of Ethiopia Mizan –Tepi city branches

A research paper submitted in partial fulfillment of the requirements for the masters of business administration (MBA)

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COLLGE OF BUSINESS AND ECONOMICS

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in case of Commercial Bank of Ethiopia Mizan- Tepi City
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**A RESEARCH PAPER SUBMITTED TO THE COLLGE OF
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MASTERS OF BUSINESS ADMINSTRATION OF JIMMA UNIVERSITY**

July 2012

Declaration

I, here by truthfully declare that the above titled research is my original work and that; it has not been presented for the award of a degree in any university.

Signature.....

Date.....

Firew Bekele

I confirm that this research paper has been submitted for the award of degree with my approval as research advisor.

Signature.....

Date.....

Hagos B.

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List of Acronyms and Abbreviations

ATM- Automatic teller machine

CBE- commercial bank of Ethiopia

POS- Point –of- sale transfer terminals

E- banking – Electronic banking

EFT- Electronic fund transfer

PC- Personal computer

PDA- Personal digital assistant

PIN- Personal identification number

WAP- Wireless application protocol

WIG- Wireless internet gateway

SMS- Short message service

UK- united Kingdom

M- banking – Mobile banking

e- wallet- customers access their bank account through their mobile phones

NBE- National bank of Ethiopia

TA- Technology associates

IT- Information technology

MCB- Multi channel banking

W.W.W- World wide web

ICT- Information communication technology

E- commerce – Electronic commerce

SPSS- Statistical package for social scientist

TAM- Technology Acceptance Model

TOE Technological- Organizational- Environmental frame work

Abstract

Banking sector is the lubricating wheel of modern economy and E- banking is one of the emerging trends of the banking industry which is not quite common yet in developing country like Ethiopia and with the exception of capital and major regional cities E- banking in Ethiopia is infant stage. So it provides a lot of scope for research. This research study aims at investigating factors affecting the application of electronic banking services in case of Mizan – Tepi city branches. A mixed research design (descriptive and explanatory) was adopted in carrying out this research and the study was conducted based on the data gathered from four branches of commercial bank of Ethiopia in Mizan- tepi: namely Mizan branch, Tepi branch, Gacheb branch and Yeki branch. Hence, convenience sampling method was employed to draw the sample respondents. Hence out of 392 respondents 386 responded the questionnaires. The collected data was analyzed by descriptive statistics, correlation and regression analysis to estimate the model using SPSS version 20. Results of the study revealed the most significant factors that organization faces in the application of e- banking are demographic factors (gender, age and education level), Technological factors (perceived risk) and environmental factors (national ICT infrastructure, lack of legal and regulatory frame work, lack of government support).In accordance with the analysis results: it is concluded that demographic factors, technological factors and environmental factors separately upon the application of E- banking have the highest positive relationship and meaningful effect. The study recommend to enhance E- banking application, the organization should upgrade the existing system of security and the government establishing a clear set of legal and regulatory frame work on the use of technology, supporting banking industry by investing on ICT infrastructure.

Key words: E- banking application, Technological factors, regression analysis

Chapter One

1. Introduction

1.1 Background of study

The increasing competitive environment in the financial service market has resulted in pressure to develop and utilize alternative delivery channels. The pressure of globalization, consolidation, deregulation and rapidly changing technology has made it necessary for banks to re-examine their services delivery systems and cop up with suitable human skill in order to suitably position them within this dynamism of information technology (Woherem, 2000).

In order to provide efficient and effective services, banks currently use latest technology, financial resources and human resources to achieve its predetermined goals and objectives. Among those resources technology is one of a competitive advantage for the banking industry to ease delivery of the intended service, to make timely decision, exploit resources user friendly, achieve the objectives of the organization as planned and contribute for the enhancement of the overall development (Abebe Zeleke, 2016). In rapidly changing and highly competitive environment success in the banking industry especially depends on having use of the appropriate technology along with retention of well trained and motivated employees who have the capacity to exploit the banks existing technology as well as look for better advancement (Abebe Zeleke, 2016).

Electronic banking a term used for new age banking system, represents an automated delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channels. It is a service that provides customers the opportunity to gain access to their accounts, execute transactions, and obtain information on financial products and services through a public or private network, including the internet (Driga, and Isac, 2014).

Electronic banking in the banking industry has evolved over the years: According to Shah and Clarke(2009), Automated teller machine(ATMs) were the first means of providing electronic access to retail customers, made possible through the introduction of computer networks. The first bank to use ATM Barclays Bank in Enfield Town in north London, United Kingdom, on 27 June 1967.Telephone banking arrived next, which was revolutionary concept since it made

banking possible from anywhere as long as telephones were available. Since then, e-banking has constantly innovated through technology improved products and services (Ogare, 2013).

The advancement in technology has played an important role in improving service delivery standards in the banking industry (Ogare, 2013). According to Karimzadeh et al (2014), the new technology has been able to alter the way of doing basic tasks. Most of the jobs, which were assigned to the bank cashier in a traditional way, now are done much cheaper by ATMs. Advancement of technology has led to people to do their banking at home.

Data published in the IMF international capital markets reports (August, 2014) and Klingebiel (2017) indicate that the provision of E- banking is particularly high in Austria, Finland, Korea, Singapore, Spain, Sweden, and Switzerland, where more than 97 percent of all banks offer E-banking (informational and transactional). E- Banking is particularly popular in the Scandinavian countries that have the highest customer user ratios with up to two- third of bank customers in Finland using electronic banking services.

The main characteristics of E- Banking activities in the United States are the following: An overview of some of the results is presented in Furst, Lang and Nolle (2015) E-Banking was concentrated in all banks about 98 percent of all national banks has websites and offered transactional electronic banking. This is a rapid increase from 20 percent in the third quarter of 1999. The banks that offer transactional electronic banking accounted for 98 percent of national banking system assets. Larger banks tended to offer a wider array of electronic banking services, including loan application and brokerage services while most customers in the United States have their accounts with banks that offer electronic banking services, Consumer use has remained limited to about 2 percent.

E- Banking has been widely used in developed countries and is rapidly expanding in developing countries. However, the slow diffusion of e- commerce to African countries has been attributed to a number of issues some of which may be unique to the African continent (Darley, 2001).

The evolution of information and communication technologies (ICT) has already shown its potential to widen access to financial services in Sub – Saharan African countries, especially for rural populations. The rapid diffusion of technology has produced “real- time” connectivity between cities and hitherto remote rural areas and provided the infrastructures for new payments

systems and basic banking services. The recent experience of Kenya, with rapid expansion of its electronic banking system enables customers to transfer money and bill payments quickly and cheaply. By now, more than 70 percent of adult Kenyans have made use of electronic banking services (Fengler, 2012) and electronic banking is gaining popularity in neighboring countries such as Uganda and Tanzania. The development of electronic payment system in some other regions such as central Africa has been low successful pointing to the important role of enabling condition in determining the impact of financial innovation.

The rapid growing information and communication technology is knocking the front door of every bank in the world; Where Ethiopian banks would never be exceptional in expanding the use of electronic banking (Gardachew, 2010).

In Ethiopia, cash is still the most dominant medium of exchange and electronic payment system at an embryonic stage. At the same time mirroring the development of electronic banking, the practice and use of electronic banking system is not well developed (Gardachew, 2010). In this context this study aims to find out factors affecting the application of electronic banking in Mizan – Tepi city.

1.2. Statement of the problem

In this era, banks are growing using technology for providing services through self-service mode by using different electronic payment channels. The services through these channels recommend numerous advantages both to the banks and their customers (Ho and Ko, 2008). The advantages of e-banking services are decreasing in cost of transaction and lessening the burden of load on branches and also for the customers feels easy to accessible as well as convenient, and time saving (Dawed,2004). Nonetheless, e-banking service under developing nations like Ethiopia needs further considerations rather than these pre-requisites. Currently, Commercial Bank of Ethiopia has been deploying large number of ATM and POS machines throughout the country by investing huge amount of money and endeavoring to expand electronic alternative self-service channels (CBE Annual Report, 2017).

All most, all banks operated in Ethiopia with some exceptions provide service to customers by using traditional systems, that is why every bank customers is highly dissatisfied by the

disappointing status of financial development in Ethiopia. Even the time wasted in traveling for search of bank branches and the long waiting time to access the account is really disappointing.

When compared with the banking industry operated in developed country, without doubt the banking industry in Ethiopia is underdeveloped and therefore, there is an all immediate need to embark 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 trades and international relations, the current banking system is short of providing efficient and dependable services (Gardachew 2010).

E- banking have a lot of benefit in delivering service to customers, with the exceptions some capital towns in Ethiopia customers were 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 ATMs, Debit cards, Credit Cards, Tele banking, internet banking and mobile banking are new to the Ethiopian banking sectors as well as commercial bank of Ethiopia Mizan- tepi city branches. 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(Ayana,2012)

Usage of e- banking in Ethiopia is challenged with lack of skilled man power, failure to set an appropriate regulatory modalities, poor internet band width that is supplied to the bank, cost of applying the technology, low level of telecom infrastructure and low level of customers or clients awareness. That means, Ethiopian banks suffer from institutional and structural problems to use e- banking. This phenomena have a large effect on e- banking diffusion and leads the population unbanked(Zerihun, 2019). The banking industry in Ethiopia is underdeveloped and therefore, there is an all immediate need to embark on capacity building arrangements and modernize the banking system by employing the state art of technology being used anywhere in the world(Gardachew, 2010)

In order to encourage further E- banking in developing countries, a better understanding of the barriers and drivers impacting E- banking adoption is critical (Zhao, AL, 2008). By gaining an in-depth understanding of the factors and conditions that influence developing country's ability to fully apply and realize its benefits strategic implications can be generated for the researchers and practitioners regarding how to promote the growth of E- banking in developing countries.

Pertinent to previous studies, different attributes have been reflected on the area of electronic banking by various researchers. For example, Gadise and Tekabe (2017) conducted the study on the determinants of electronic banking service adoption and results shown that cost, trust, privacy and security are significant determinants of electronic banking service adoption. On the same way with related research title Mahasa and Ali (2018) lack of legal and regulatory issues have significant effect on electronic banking adoption. Before four years of the above authors similar study conducted by Wondwossen and Tsegai clearly elaborated that adequate legal and regulatory structure and security frame work could faster the use of e- payments and which is contradicting with the findings of the previous studies.

There are also other researcher who conducted on related issues, on the adoption of electronic banking (Ayana,2014), security risk, lack of trust, lack of legal and regulatory frame work, lack of ICT infrastructure and absence of competition between local and foreign banks are the major barriers for the adoption of electronic banking services. Most empirical studies and published researches were conducted in developed and industrialized countries. In contrast, little is written in developing countries. The researchers did not consider the cultural, geographic, demographic as well as infrastructural aspects of developing countries and most researcher couldn't addressed the organizational factors for the application of electronic banking. Therefore, this study intended to fill focused area and contextual gap by revealing out the factors that affect the application of e-banking services in case of commercial bank of Ethiopia Mizan- Tepi city branches.

1.3 Objectives of the study

1.3.1 General Objectives

The main objective of this research is to assess the factors that affecting the application of electronic banking service in case of commercial bank of Ethiopia Mizan –Tepi city branches.

1.3.2 Specific Objectives

The study pursued the following specific objectives:

- To assess the influence of technological factors on the application of e- banking service among commercial banks customer in Mizan- tepi.
- To identify the influence of demographic factors on the application of e- banking service among commercial banks customer in Mizan- tepi.
- To identify the influence of organizational factors on the application of e- banking service among commercial banks customer in Mizan- tepi.
- To identify the influence of environmental factors on the application of e- banking service among commercial banks customer in Mizan- tepi.

1.4. Research Hypothesis

Based on the research objective stated above, the following research hypotheses are developed:

H₁: There is a relationship between technological factors and application of E- banking.

H₂: There is a relationship between Environmental factors and application of E- banking.

H₃: There is a relationship between organizational factors and application of E- banking.

H₄: There is a relationship between demographic factors and application of E- banking.

1.5 Significance of the study

The study assumes significance in terms of its contribution to investigate the most crucial factors affecting the application of electronic banking. The study also would have a lot of importance to the existing literature by providing evidence on the factors affecting the application of electronic banking in Ethiopia. Apart from contributing to the literature, the paper also have important practical implications for bank managers to develop a frame work for assessing electronic banking service. Finally, this study can be used as a foundation for other researchers who would like to undertake research on similar and/ or related area of study.

1.6 Scope of the study

Although there are different commercial banks in Ethiopia, this study targeted on the commercial bank of Ethiopia found in Mizan –tepi town. Specifically the research was confined on the four branches of commercial bank of Ethiopia, all providing e- banking services through ATM, mobile banking and internet banking channels. Furthermore, the sample size consists of commercial bank of Ethiopia customers’ in Mizan –tepi city branches.

1.7 Limitation of the study

The focus of this study is on the assessment of the factors that affect for the application of e-banking service of CBE Mizan- tepi branches. The limitation of the study was the lack of previous studies in Ethiopia around the e- banking application factors and due to this it was very difficult to get well experienced and knowledgeable expert on the area that could give the researcher a broader perspective on the matter as well as literature in this area from the country perspective on the matter. In addition the researcher also faced financial limitation to conduct comprehensive and detail study by taking large sample as well as larger scope, the occurrence of rapid spreading virus which is called corona virus and the new and accidental Chios between people for four continuous months in Mizan- tepi which is occurred in the time data collecting is limitation in conducting the study. The researcher used different technique to minimize challenges like using mask in time of data collecting keep myself and others against corona and the researcher planned its scope in district level to conduct the study but due to financial limitation minimize in to city level.

1.8 Organization of the study

The paper would have five chapters. The first chapter deals with the introduction part that consists of background of the study, statement of the problem, Objectives of the study, significances of the study and scope of the study. Chapter Two contains a review of the related literature. The research design and methodology is would present in chapter three. Inchapter four, the results and findings of the study would be discussed. Finally, the last chapter deals with the conclusions and recommendations that would be forwarded based on the result obtained.

Chapter Two:

Literature Review

This chapter presents an overview of the Electronic banking services and would present theoretical and empirical review of literature. The researcher would discuss the history of the banking industry in Ethiopia as well as the progress of E- banking in the country and also try to identify the major factors affecting the application of Electronic banking in availing the services by going through different research papers, journals and books.

2.1 Theoretical Review

The theoretical literature helps the researcher to identify clearly the variables of the study; provides a general frame work for data analysis; and helps in the selection of applicable research design.

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 (Malak 2007).

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, p.5). 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.

Another definition of E- banking is that “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 a telecommunications network” (Yang 1997, p.2). It should be noted that electronic banking is a bigger platform than just banking via the internet.

E- banking can also defined as a variety of platforms such as internet banking (or online banking), TV based banking, mobile banking, and PC (personal computer) banking (or offline

banking) whereby customers access these services using an intelligent electronic device, like PC, personal digital assistant (PDA), Automated teller machine (ATM), point of sale (POS), Kiosk, or touch tone telephone (Alagheband 2006, p.11).

2.1.2 Types of E- banking services

According to Alghaeband, there are different types of E- banking discussed as follow:

2.1.2.1 Automated Teller Machines (ATM)

ATM is an electronic terminal which gives consumers the opportunity to get banking service at almost any time. To withdraw cash, and transfer funds between accounts, a consumer needs an ATM card and a personal identification number (PIN).

The ATMs also enable customers to check their account balance, deposit cash or cheques, and transfer money between their bank accounts. (Noorah et al, 2009). In order to get ATM services, customers need ATM cards and secrete PIN codes. The ATM card is a smart card used for security purpose only. The ATM card coupled with a PIN code provides state-of-the- art authentication scheme called two factor- authentications.

ATM card is a kind of plastic card which allows a cardholder to withdraw money from his bank account through automated teller machine (Buckle and Beccalli, 2008). This card can be used also for other banking services like deposit, transfer to any other account by using the ATM machine and , make payment of purchase by using point of sale (POS) outlets. The primary advantages of ATMs are they save the customer's time in service delivery and it is cost efficient way of yielding higher productivity per period than human tellers. Furthermore, as the ATMs continue when human tellers stop, therefore, there is continual productivity for the banks even after banking hours. (Tilahun, 2015)

Major challenge in the usage of ATM is the unreliable telecommunication networks and power failure, which results in temporary service interruption.

2.1.2.2 Debit card

Debit cards are also known as check cards. Debit cards are look like credit cards or ATM (automated teller machine) cards, but operate like cash or a personal check. Debit cards are different from credit cards while a credit card is a way to "pay later," a debit card is a way to "pay now." When customers use a debit card, their money is quickly deducted from their

checking or savings account. Debit cards are accepted at many locations, including grocery stores, retail stores, gasoline stations, and restaurants. (Noorah et al, 2009)

2.1.2.3 Point-of-Sale Transfer Terminals (POS)

Point-of-sale system that allows consumers to pay for retail purchase with a check card or 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.

Electronic fund transfer at point sale would provide services for customers to pay cheques and cash withdrawals for shopping without clerical duties. In addition, the system continues after banking hours and hence continual productivity for the bank even after working hours. In the same development it save customer time without going to bank branches and ATMs point. (Tilahun, 2015)

It is important to note that in Ethiopia very few department stores and restaurants have established POS machine to perform transaction through debit cards. In Ethiopia people are hesitant to receive payment through electronic medium due to lack of proper education about e-payment.

2.1.2.4 Internet Banking

Internet banking is an electronic home banking using web technology in which bank customers are able to conduct their business transactions with the bank through personal computers.

Internet banking also referred as online banking, web banking or virtual banking a system that enables bank customers to access accounts and general information on bank products and services or performs account transactions directly with the bank through a personal computer using the internet as the delivery channel. customers are able to access all of their accounts through the web site of the bank and are allowed to conduct banking activities such as transferring funds, paying bills, viewing account balances, paying mortgages or purchasing financial instruments and certificates of deposits (Imola and, claudia, 2014).

According to Noorah et al (2009), Internet banking used to handle many banking transactions via your personal computer. Personal computer is conducted by a network service provider directly to a host computer system of a bank such that customer service representatives. The system is capable of distinguishing between those customer service requests which are capable of

automated fulfillment and those requests which require handling by a customer service representative.

2.1.2.5 Mobile Banking

Mobile banking is a system that allows bank customers to conduct different financial transactions through a mobile device, being the newest service in electronic banking; mobile banking relies on WAP (Wireless Application Protocol) technologies since a mobile device requires a WAP browser installed in order to allow access to information (Driga and Isac, 2014).

Some banks are making significant investments in mobile systems to deliver a range of types of business value, from increased efficiency and cost reduction, to improved operational effectiveness and customer service to provide a competitive advantage (Shah &, Clarke, 2009).

In those countries where traditional telecommunication infrastructure is not well developed, mobile technologies is transforming accessibility to the internet based services. Mobile banking may be described as the newest channel in electronic banking to provide a convenient way of performing banking transaction using mobile phones or other mobile devices. The potential for mobile banking may be far greater than typical desktop access, as there are several times more mobile phone users than online PC users. Increasingly "mobile life styles" may also fuel the growth of anywhere, anytime applications (Shah &, Clarke, 2009)

There are two main types of technologies available for use in mobile Banking: Wireless Application Protocol (WAP) and Wireless internet Gateway (WIG). WAP is an application environment and set of communication protocols for wireless devices designed to enable manufacturer, vendor, and platform independent access to the internet and advanced telephone services. WIG is a Short Message Service (SMS) - based service, in which a menu of available banking options is initially downloaded from the bank to the phone device (Shah &, Clarke, 2009)

This enables users to browse bank accounts and conduct other banking related tasks. Mobile banking was offered in the UK by the banks such as The Woolwich during early 2000s, but it failed to achieve a critical mass of users. The story has been repeated in many other countries with mixed results. (Shah &, Clarke, 2009)

The main hurdle in development of mobile banking is low consumer adoption due to a number of factors discussed below: Internet connectivity costs, difficult user interface, lack of awareness amongst customers, limitations in functionality of mobile devices, accessibility issues, security concerns, organizational changes, small number of choices (only a few banks offer mobile banking), and technology overload.(Shah &, Clarke, 2009)

The mobile banking development in Ethiopia is not full- fledged in terms of exhaustively utilizing all the mobile service one can get. Currently, of all the types of mobile banking services, most customers of the bank use notification or alarm inquiry. (Biritu, 2015)

2.1.2.6 Agent Banking

A banking agent is a retail or postal outlet contracted by a financial institutions or a mobile network operator to process clients' transactions. Rather than a branch teller, it is the owner or an employee of the retail outlet who conducts the transaction and lets clients deposit, withdraw, transfer funds, pay their bills, inquire about an account balance, or receive government benefits or a direct deposit from their employer. Banking agents can be pharmacies, supermarkets, convenience stores, lottery outlets, post offices, and more.

Banking agents are usually equipped with a combination of point-of sale (POS) card reader, mobile phone, barcode scanner to scan bills for bill payments transactions, personal identification number (PIN) pads, and sometimes personal computers (PCs) that connect with the bank's server using a personal dial-up or other data connection. Clients that transact at the agent use a magstripe bank card or their mobile phone to access their bank account or e- wallet respectively. Identification of customers is normally done through a PIN. With regard to the transactions verification, authorizations, and settlement platform, banking agents are similar to any other remote bank channel.

According to NBE Directive, agent banking is the conduct of banking business on behalf of a financial institution through an agent using various service delivery channels. Mobile banking is performing banking activities which primarily consists of opening and maintaining mobile/ regular accounts and accepting deposits; furthermore, it includes performing fund transfer or cash in and cash out services using mobile devices. (Solomon, 2016)

The service enables the bank to use banking agents that double as a kind of branch to process basic banking services including M- wallet account, making deposits and withdrawals, transferring funds as well as sending and receiving money. (Solomon, 2016)

2.1.3 Banking history in Ethiopia

A reference to the Ethiopian history reveals that the first bank in the country, Bank of Abyssinia was founded during the reign of Emperor Menelik II in February 1905. Due to a foreign domination of its management (mainly the British), the then Bank of Abyssinia was forced to dissolve and in its place was established the Bank of Ethiopia in 1931. The Bank of Ethiopia was later replaced by the State Bank of Ethiopia soon after the war with Italy. The latter was the first bank in the country fully controlled and owned by the Ethiopian government. In the main time, however, a number of foreign banks had opened their branches in the country, most of them with an interest to have control over the nation's economy. It was the State Bank of Ethiopia that gave rise to the present Commercial Bank of Ethiopia (CBE) and National Bank of Ethiopia (NBE). During the Dergue reign, CBE had remained as the only participant in the country's commercial banking sector. However, following the 1991 takeover by the present government and accompanying encouragement of private investment, a number of private banks have emerged in the country's financial sector. Accordingly, Monetary and Banking proclamation No. 83/1994 and the licensing and Supervision of Banking Business No.84/ 1994 laid down the legal basis for investment in the banking sector. Consequently, shortly after the proclamation the first private bank, Awash International Bank was established in 1994 by 486 shareholders and 1998 the authorized capital of the Bank reached Birr 50 million. Dashen Bank was established on September 20, 1995 as a share company with an authorized and subscribed capital of Birr 50 million. 131 shareholders with subscribed and authorized capital of 25 million and 50 million founded bank of Abyssinia. Wegagen Bank with an authorized capital of Birr 60 million started operation in 1997. The fifth private bank, United Bank was established on 10th September 1998 by 335 shareholders. Nib International Bank that started operation on May 26, 1999 with an authorized capital of Birr 150 million. Cooperative Bank of Oromia was established on October 29, 2004 with an authorized capital of Birr 22 million. Lion International Bank with an authorized capital of Birr 108 million started operation 02, 2006. Zemen Bank that started operation on June 17, 2008 with an authorized capital of Birr 87 million. Oromia International Bank that started operation on September 18, 2008 with an authorized capital of Birr 91 million.

In addition, recently Buna International bank, Birhan International bank, Enat bank and Abay bank are started operation in the country (NBE, 2011).

2.1.3.1 E- Banking system in Ethiopian Banking Industry

The appearance of E- banking in Ethiopia goes back to the late 2001, when the largest 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. (Gardachew, 2010)

According to Wondwossen and Tsegai, (2005), in 2005 commercial bank of Ethiopia (CBE) offer ATM service with eight ATMs in Addis Ababa. These ATMs enable customers to withdraw limited amount of money from their account at any time. The ATMs also enable customers to check their account balance. However, depositing money through ATM is not currently possible. In order to get ATM services, customers need ATM cards and secrete PIN codes. The ATM card is smart card used for security purpose only. The ATM card coupled with a PIN code provides state -of -the -art authentication scheme called two- factor authentication.

Harnessing its leadership with advanced banking technology, Dashen bank started to use ATM machine to deliver service to its customers in 2006, and the bank adopts mobile banking (Modbirr) in the year 2009.(Ayana,2012). 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 Gate way and MiCard E- payment processing solutions to Dashen Bank. Dashen's Modbirr users can transfer 500 birr to other Modbirr 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. (Alemayehu and Jacqueline, 2011)

Although Dashen Bank is pioneer in harnessing new technology, the younger United Bank was the first to introduce telephone and Internet banking systems- including text messages(SMS)- by the end of 2008. (Esayas, 2016)

United bank received the approval to go on delivering agent banking on March 31, 2015. In its Agent banking services, United will provide branchless services banking especially for the unbanked society. Following the permission of mobile and agent banking, united bank established a team responsible for the implementation of the service in line with the Bank's strategic focus on technology led banking which synchronize with its new motto "Beyond Core Banking to Technology Led Excellence". (Solomon, 2016)

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. In the other hand in February 2009 three private commercial banks -Awash International Bank S.C., Nib International Bank S.C. and United Bank S.C signed to launch ATM and POS terminal work. (Ayana, 2014)

Zemen Bank launched multi-channel banking (MCB) services in Ethiopia, which includes ATMs, Internet Banking, Banking through call center and SMS banking. These services introduced October 22, 2009, makes Zemen Bank the first in Ethiopia to introduce fully IT supported and 24/7 customers services to local bank customers. (Matiwos, 2016). The new and never -been - tried service proposed by the bank is to include free account money transfer, corporate payroll uploading system where employees could upload payroll to the system and make payments to individual worker's accounts online and online utility bill settlements system, when utility companies are ready (Asrat, 2010).

The Multi- Channel Banking services were designed for bank customers that require easy access to the bank's facilities while they are On-The- Go. Zemen Bank designed and equipped each of the new services with a user friendly Amharic and English language support. Zemen Bank customers can access their account from their PC/ Laptop, Mobile phone, ATM, and through a direct phone call to the dedicated and customer friendly Zemen Bank call center. The Multi-Channel Banking services are free of charge to all Zemen Bank customers. ATM cards are also issued immediately and free of charge to all customers who open an account with Zemen Bank. (Beza, 2010)

The long awaited national switch system, ET switch S.C has gone operational on April 20, 2016, According to Addis Biz report, now depositors in Ethiopia can cash their account from any ATM

even if it is not operated by the bank where they have deposited their savings. ET switch was established in 2011 by 16 banks, with 80.5 million birr registered capital. This event has great advantage to the development of e- banking service in Ethiopia by increasing the accessibility of ATM machine for the bank customers all over Ethiopia.

By using ET switch, a client of any of the 16 banks will enjoy services including cash withdrawals and cheque balancing by the ATMs. There are close to 2000 ATMs operating across the country, but mainly in the capital, Addis Ababa. Clients are now also buy and be refunded through point of sale (POS) machines.

2.4 Benefit of E- banking system

Business organizations are trying to uncover the new technologies coming from the E-commerce applications which have a lower transactions cost resulted to eliminate association in distributing channels (Salman &Kashif 2010). The cost can be reduced to zero in some services like information and manufactured goods information. Transaction of low cost and easiness provides to adopt the new trend of technology to trade information among different groups and business parties. Information and communication technology transformed business to go from local and global. However it has been said that E- banking is vital in the banking sector of developing countries (Polatoglu and Ekin 2001). The online payment system is quite new in banking institutions and dispersion of these innovations can result in more competent online banking systems which resulted in lots of changes in the technologies of the banking sectors. Generally E- banking has benefits for banks, customers and for the economy.

2.4.1 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 banks reputation and better customer services and satisfaction are primary benefits to banks. (Jayawardhena& Foley, 2000)

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 practice 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 utilization of full service E- banking, it is unlikely that they will change to another financial institution.

Specifically, banking industry has also received numerous benefits due to growth of E- banking infrastructure. There are highlighted below: (Mols, 1998).

- The growth of E- banking has greatly helped the banks in controlling their overheads and operating cost.
- Many repetitive and tedious tasks have now been fully automated resulting in greater efficiency, better time usage and enhanced control.
- The rise of E- banking has made banks more competitive. It has also led to expansion of the banking industry, opening of new avenues for banking operations.
- Electronic banking has greatly helped the banking industry to reduce paper work, thus helping them to move the paper less environment.
- Electronic banking has also helped bank in proper documentation of their records and transactions.
- The reach and delivery capabilities of computer networks, such as the Internet, are far better than any branch network.

2.4.2 Benefits of E- banking for Customers

The benefit of E- banking is not limited to banks but also to their customers. Thanks to the emergency 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 enjoy improved privacy in their interactions with the banks. In addition, Customers can enjoy more benefits at lower cost levels by utilizing E- banking (Mols 1998).

It is conducted by Turban (2008), that E- banking is really beneficial to customers such as:

Convenience- by e- banking, customers can carry out their banking activities whenever you want. E- Banking is a 24 hour service, so customers are no longer tied to the branch's hours. On top of that, they don't have to take the time to travel to the branch and wait in the inevitable lines, thus giving you more time to do what you want.

Mobility - e-banking can be done from anywhere, as long as customers have an Internet connection.

No Fees- Because an e- bank doesn't have to worry about funding an actual bank location with all of those additional costs, fees can be reduced and are often non -existent. Those checking and savings accounts that are offered by completely online banks usually have no fees at all.

Online Statements - Most online banks try to be as paper -free as possible. Most statements and correspondence is done online, reducing the amount of paper used and sent out to you. This again will help reduce the costs of the online bank. As an added bonus, this makes online banking a great environmental choice. Be warned, some banks do charge if do want a paper copy of something.

Direct Deposit - With any incoming money, such as salary, customers can arrange for it to be direct deposited into the bank account by the company sending the money. This is actually a double benefit, as customers don't have to take the time to deposit the check, plus the money goes into customers account faster allowing them to earn interest that much quicker.

Automatic bill paying - With automatic bill paying, customers can automate paying their bill monthly bills.

Real Time Account Information - Because customers can access their account any time, they can get up to date, real time information on the money in your account.

Transfer - Transfer between accounts with the same financial institution online can be done almost instantaneously. Not only is there no hold on the money being moved around, you can do it whenever you like and from wherever.

2.4.3 Benefits to General Economy

Electronic Banking as already stated has greatly serviced both the general public and the banking industry. This has resulted in creation of a better enabling environment that supports growth, productivity and prosperity. Besides many tangible benefit in form of reduction if cost, reduced delivery time, increased efficiency, reduced wastage, e- banking electronically controlled and thoroughly monitored environment discourage many illegal and illegitimate practices associated with banking industry like money laundering, frauds and embezzlements. (Pham 2010)

Benefits from the economical' point of view E- banking served so many benefits not only to the bank itself, but also to the society as a whole.(Pham 2010)

E- Banking made finance economically possible:

1. Lower operational costs of banks
2. Automated process
3. Accelerated credit decisions
4. Lowered minimum loan size to be profitable

Potentially lower margins:

1. Lower cost of entry
2. Expanded financing reach
3. Increased transparency

Expanded reached through self-service:

1. Lower transaction cost
2. Make some corporate services economically feasible for society
3. Make anytime access to accounts and loan information possible

2.5 Factors affecting the application of E- banking system

Electronic banking despite its numerous benefits, there are factors in the implementation of e-banking applications. Some of the identified factors as revealed by previous research works include security, infrastructure, technological factors, regulatory and legal issues, and perceived risk and socio cultural challenges.

2.5.1 Security

One of the biggest factor and the basic requirements of e- banking are ensuring its security. Securing the process in e-banking involves authenticating data of the customer and banker and protecting the information to be transmitted from interception. This authentication can be done using user ID and passwords. In addition a means must be provided that prevent repudiation both by the merchant and customer once the payment process has taken place (Barnes and Hunt, 2001)

According to worku (2010), e- banking systems must also take in to account the need of multilateral security keys i.e. security needs of all participating parties in the e-banking system. An e- banking system that is not secured may not get trust from its users. Trust is one of the basic factors to ensure the acceptance of e-banking system users. Martina (2005) also indicated that e- banking applications represent a security challenge as they highly depend on critical ICT systems that create vulnerabilities in financial institutions, business and potentially harm customers. It is imperative for banks to understand and address security concerns in order to leverage the potential of ICT in delivering e- banking applications. Software failures can also be considered as security factors as it destroy entire portions of a network and bring huge losses. According to Tadesse and Kidan(2005), some of the major security factors include the following.

A. Disclosure of private information

In e- banking there are many ways in which private information may be accessed by attackers. For instance hackers may intercept network traffic to get conditional data. It is also possible to access private data stored on a computer connected to the internet. This data could be used to make fraudulent transactions that could lead to a loss of money.

B. Counterfeiting

Counterfeiting is the creation of new data or duplication of existing data, which are technically valid but not legally admissible. Closing of e- money for double spending and creation of fake accounts are example of counterfeiting. One popular form counterfeiting attacks is duplication of electronic data from a payment cards (e.g. ATM card) is creating duplicate cards and withdraw money from accounts.

C. Illegal alteration of payment data

Illegal modification of payment information may result in loss of money. This may again results in the loss of customer confidence. Alterations could be made to the transactions account numbers resulting in misdirected payments, to the payment amounts or to electronic balances on electronic. Another factor in electronic banking includes usage of fraudulent website by an attacker to collect credit card number and other personal and/ or financial information.

According to Taddesse and Kidan (2005), the most common method of securing e- banking services is using cryptographic based technologies such as encryption and digital signatures. However, applying these technologies will reduce its efficiency by making it slower and as a result some sort of compromising has to be made between security and efficiency.

2.5.2 Infrastructure

The other factor for the application of e- banking is proper infrastructure. For the effective deployment of e- banking, it is necessary to have a reliable and cost effective infrastructure that can be accessible to the majority of the population.

The most common communication infrastructure for e-banking is computer network such as internet. Most e- banking systems use internet to communicate with their customers. The other communication infrastructure for e- banking available for e- banking users is the mobile

networks used for mobile phone. Automating the banking activities is another prerequisite for e-banking system.

Closed financial network that links banks and other financial institutions is necessary. This network is usually used between banks or other financial institution for clearing and payment confirmation.

National ICT infrastructure is a major factor that supports the application of E- banking as the case for other E- commerce initiatives. Without an adequate development level and quality of a nation's ICT infrastructure, E- banking use cannot do well (Efendioghu 2004 & Scupola 2003).

According to Kumaga (2010), low level of internet penetration and poorly developed telecommunication infrastructure impede smooth development and improvements in e-commerce in developing countries. Another major problem that relates to this is frequent power disruption. This will create lot of problems in e- banking activities which are basically depending on power supply. It will force the banks to depend on generators results in high operational cost. These problems are considered as obstacles for the expansion of e- banking services.

2.5.3 Regulatory and legal issues

National, regional or international set of laws, rules, and other regulations are important prerequisites for successful implementation of e- banking services. Some of the main elements include rules on money laundering, supervision of commercial banks and money institutions by supervisory authorities, payment system oversight by central banks, consumer and data protection, cooperation and competition issues (European Central Bank, 2002)

According to Mishra (2009), the virtual and global nature of e- payment also raises legal questions such as which jurisdiction will be competent and about applicable laws in disputed cases, validity of electronic data, electronic contracts, and electronic signature.

Moreover, a legal and regulatory framework that builds trust and confidence supporting technical efforts to meet the same is another important issue that needs to be addressed. In this regard legislative support is essential for protecting the interests of customers and banks in various areas relating to e-banking and payment systems. Some of the main issues like liability for loss in case of fraud, allocation of loss in case of insolvency, cheque truncation, evidence and burden of

proof, preservation of records, prevention of fraud, etc. are to be cleared in the legislation. This can be done by adopting model laws at global level such as UNCITRAL Model law on E-commerce (1996). UNCITRAL Model law on E- signatures (2001) and at regional level such as SADC Model law on Electronic transactions and data protection (Mishra, 2009)

2.5.4 Socio- Cultural Factors

Cultural and historical difference in attitudes and use of different forms of money (e.g. use of credit card in North America and use of debit cards in Europe) complicate the task of developing an electronic payment system that is applicable at international level. Difference in the degree of the required security and efficiency among peoples of different cultures and level of development aggravates the problem (Tadesse and Kidan, 2005)

2.5.5 Perceived risks

One of the most important risks faced by banking institutions in using E- banking services is the customers' resistance to use the services which significantly hinder the growth of E- banking (Zhao et al. 2008 & Laforet 2005). Issues related to security have always been a concern when dealing with technologies related to online transactions such as E- banking (Chang 2007 & Rogers 2003). Therefore, the perception of the risks regarding E- banking is expected to influence in order to use and further growth.

2.6 Empirical Studies

Some related studies are conducted by different researchers in different parts of the world. 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 framework 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) studied on the challenges and opportunities of E-payment in Ethiopia. According to the authors the main factors to the development of E- payment are, lack of customer trust, absence of laws and regulations for E- payment, lack of skilled man power, and frequent power disruption and adequate legal structure and security framework could foster the use of E- payment, Which is contradicting with the finding of the previous studies.

On the other hand the study conducted by Ayana (2014) on the factors affecting adoption of electronic banking system in Ethiopian banking industry. According to the authors the major barriers Ethiopian banking industry faces in the adoption of electronic banking are: security risk, lack of trust, lack of legal and regulatory framework, lack of ICT infrastructure and absence of competition between local and foreign banks.

Zerihun, Ethiopia and Tesfaye (2019) conducted the study on the assessing the determinants for the adoption of electronic banking services in case of Dashen bank. The researchers revealed that perceived risk had a negative relationship, perceived ease of use and perceived usefulness has significant and positive relationship with adoption of Electronic banking.

Gadise and Tekabe (2017) conducted the study on the determinants of Electronic banking services among commercial banks in Ethiopia: analysis of banks customers' perspective. The authors revealed that cost, trust, privacy and security are significant determinants of electronic banking services adoption among commercial banks in Ethiopia.

Mahsa and Ali (2018) studied reviewing the issues and challenges of electronic banking regime in Iran. According to the authors the challenges that the electronic banking system faced include financial regulative and legal issues, organizational factors and process issues, infrastructure and system.

The study conducted by Daghfous and Toufaily (2007) organizational variables (bank size, functional divisions, technical staffs, technical infrastructure, perceived risks, decision makers' international experience and mastery of innovation) are variables which exert significant on the adoption and usage of E- banking.

Ram and Sheth (1989) argue that consumer resistance to the innovation is caused by functional barriers and psychological barriers. Functional barriers can be divided into three: the usage

barriers, the value barriers and the risk barriers, whereas psychological barriers can be divided into traditional barrier and image barrier. According to Ram and Sheth (1989) functional barriers arise when consumers perceive changes would take place when adopting innovation and the psychological barriers are caused by consumer's beliefs.

According to Khanfar et al (2006) conducted study on the customer satisfaction with internet banking and the study identified some factors which can determine customer's satisfaction in the use of internet banking service: such as; customer supports, security, ease of use, digital products/ services, transactions and payment, information content, and innovation. Researchers employ a survey questionnaire to gather data and their results showed that there is a narrow-based satisfaction with internet banking in all factors through a multi- regression; the researchers found out that all factors have an impact on the customer satisfaction, and they have found that the relation was positive.

In general, Review of Empirical studies shows that understanding the practice and challenges of E- banking in Ethiopia, Africa and in the other worlds. The study mostly deals about the opportunities and challenges of E- banking practice. The main obstacles and barriers that oppose E- banking practice are the concerns of security, privacy of information and technology investment cost. Also the literature review indicates that according to the customers there are different factors that influencing the practice of E- banking such as, perceived advantages and other factors related to the service itself & how to be accepted and used by the customers, which differ country to country, reflecting the economic and technological development in each country. This study would generally tried to assess the general factors in order to apply E- banking services, benefits of e- banking for the banks, customers and general economy. Problems related with the application of E- banking and also the practice of E- banking by customers.

2.7 Theories on application of Technological innovation

There are different factors that affect the practice and application of technological innovation in general and specifically E- banking. There are many theories for the adoption of IT. The most used theories for technology application are the technology acceptance model (TAM) (Davis F.1989), theory of planned behavior (TPB) (Ajzen 1985,Ajzen 1991), unified theory of acceptance and use of technology(UTAUT) (Venkatesh et al.2003), technology organization

environment (TOE) framework (Tornatzky and Fleischer 1990). TAM, TPB and UTAUT are individual level models while TOE is firm level model (Tiago and Maria 2011). The following sections discussed some of the above IT application models in detail for the application and practice of new technology.

2.7.1 Technology- Organization- Environment (TOE) framework

TOE framework was proposed by Tornatzky and Fleischer; it is designed for studying the likelihood of applying success of technology innovations. This framework is a comprehensive and well received framework in the context of innovation application by organizations and has been used in many studies (Salwani, et al & Ellis 2009). According to Tornatzky and Fleischer (1990), technology application within an organization is influenced by factors pertaining to the technological context, the organizational context, and the external environment. Even though this paper is trying to assess the practice of e- banking it is also including the implementation and application of e- banking. Typical characteristics of technology considered in technology adoption studies are based on the assumption of Rogers diffusion of innovation (Rogers 2003), which include relative advantage (perceived benefits), and relative disadvantage (perceived risks), While the organizational factor refers to the organizations characteristics that influence its ability to apply and use of E- banking system. The environmental factor refers to the external environment in which an organization operates and its conditions for supporting the development E- banking services. For each context, various factors have been identified from the literature but only those that are considered relevant for E-banking application are included in the framework. Details of factors considered in this study are discussed below.

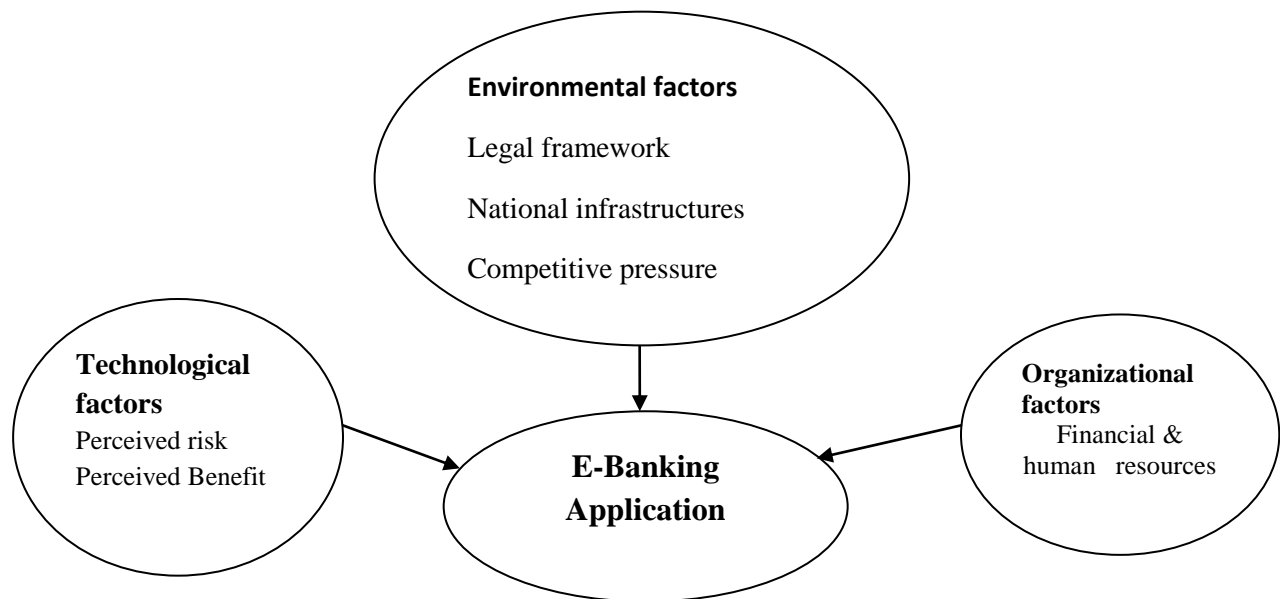


Figure 2.1 Technological- Organizational- Environment (TOE) frameworks

Source: Ayana (2012)

2.7.1.1 Technological Factors

It appears that there is a lack of consensus on what factors belong to this context. For example, one study (Salwani 2009) includes technology competence covering existing technology infrastructure and skills to utilize the technology in this context, while other studies (Ellias& Chang 2007) consider some relevant characteristics of technology, To avoid overlapping between technology and organizational contexts, researcher chooses two basic factors related to technology competence, which have relevant to the organizational factors, i.e. perceived benefits and perceived risks are considered in this study from the technological factors.

1. Perceived benefits (Relative advantage): Perceived benefits of E-banking cover both direct and indirect benefits for the banking industry as well as for the customer. Direct benefits include the savings on operational cost, improved organizational functionality, productivity gain, improved efficiency and increased profitability. Indirect benefits include the opportunity or intangible benefits such as improved customers satisfaction through improved services, improved banking experience and fulfillment of their changing needs and life style(kuan&Chau 2001)

2. Perceived risks (Relative Disadvantage): One of the important risks faced by banking institutions in applying E-banking services is the customer's resistance to use the services which significantly hinder the growth of E- banking (Laforet 2005). Issues related to security have always been a concern when dealing with technologies related to online transactions such as E- banking (Chang 2007 & Rogers 2003). Therefore, the perception of the risks regarding E- banking is expected to influence its application and further growth.

2.7.1.2 Organizational Factors

Organizations are different in their preference to apply technological innovation (Lacovou 1995&Grover 1993) influenced by a number of factors, like firm size, top management support and financial and human resources. In the framework for this study, researcher uses one basic organizational factor as discussed below.

Financial and human resources: Financial resources are an important factor in facilitating innovation application for any organization and they are often correlated with the firm size (Kuan 2001 &Lacovou 1995). Therefore, it is expected that the availability of financial resources within the applying firms is important for E- banking practice. These resources enable banking institutions to obtain human related resources including the required skills and expertise to develop and support provision of E- banking services.

2.7.1.3 Environmental Factors

Researcher identified factors related to the environmental context that play a crucial role in technology application and some factors in this category are arguably more influential than others, especially when countries under study have an authoritative government leadership. The four environmental factors relevant for e-banking application included in this study are:

1. Legal Framework: The existence and maturity of E-commerce legal frameworks within a country influence the diffusion of online transaction including E-banking as demonstrated in various studies (Tan & Wu 2002; Martinson &Trappey 2001).
2. The national ICT infrastructure: National ICT infrastructure is a major factor that supports the application of E-banking the case for other E-commerce initiatives. Without an adequate development level and quality of a nation's ICT infrastructure, E-banking adoption and use cannot do well (Efendioghu 2004 &Scupola 2003).

3. Competitive pressure: competitive pressure can strongly influence any bank to develop and adopt E-banking intuitive and it may affect the bank's perception toward E-banking system. As implied in previous studies (Quaddus&Hofmeyer 2007; Gibbs, Kraemer &Dedrick 2003).
4. Government support: - Government can be either directly or indirectly affect the application of E-banking in terms of creating a favorable environment and impetus for banking institution and their customers so that the services can be diffused with the community (Kuan 2001 &Iacovou 1995). Generally these theories discuss different variables associated with the application of E-banking and i.e. from the technological factors perceived benefits and perceived risks, from organization factors human and financial resources and from environmental factors legal frameworks, national ICT infrastructures. Competitive pressure and government support and this theory used to test does this variables affect the application of E-banking in Ethiopian banking industry.

2.7.2 Theory of Reasoned Action (TRA)

The theory of reasoned action (TRA), developed by Fishbein and Ajzen(1975), is probably one of the most influential theories used to explain human behavior (Venkatesh et al., 2003). Simply put, according to this theory, the behavioral intention can be explained by the attitude toward behavior and subjective norm. The attitude towards behavior is defined as “an individual's positive or negative feeling (evaluative effect) about performing the target behavior” (Fishbein and Ajzen, 1975, p. 216). Subjective norm refers to perception that most people who really matter to the individual think that he either should or should not perform the behavior in question” (Fishbein and Ajzen, 1975, p. 302). Attitude towards behavior, in turn, can be explained by the salient beliefs in the behavior. This theory is given high emphasis to human behavior, norms and beliefs and used to investigate customer's behavior, beliefs and norms about the adoption of E-banking in Ethiopian banking industry.

2.7.3 Theory of planned behavior (TBP)

This theory proposed by Ajzen(1985)as an extension of TRA (Fishbein and Ajzen, 1975) for situations where people do not have complete control over their behavior. Basically, TBP adds a determinant to the behavioral intention and the attitude towards behavior constructs which is the perceived behavior control. This constructs reflects how people perceive the

internal and external limitations to their behavior. One formal term, it refers to how easy or difficult people believe it would be to perform certain behaviors (Ajzen, 1985)

In TBP, behavior itself is a function of both behavioral intention and the perceived behavioral control. Behavioral intention, in turn, is influenced by the attitude towards behavior, the subjective norm and the perceived behavioral control. The determinants of intention (attitude, subjective norm, and perceived behavioral control) are established by the structure of the underlying (attitudinal, normative and control) beliefs.

➤ **Strength**

It can peoples non- volitional behavior which cannot be explained by the theory of reasoned action, can explain the relationship between behavioral intention and actual behavior, better predicate health- related behavioral intention than theory of reasoned action and can explain the individual's social behavior by considering social norm as an important variable(Ajzen, 1989)

➤ **Limitations**

It is based on cognitive processing, and criticized the theory on those grounds, it ignores ones need prior to engaging in a certain action and give high emphasis to human behavior, norms and beliefs and used to investigate customers behavior, beliefs and norms about the application of E- banking in banking industry(Sniehotta, 2009)

2.7.4 Technology acceptance model (TAM)

According to Davis 1989 TAM assume two sets of beliefs, i.e. perceived Ease of Use (PEoU) and perceived usefulness (PU) to look at individual's technology acceptance. TAM proposes perceived Ease of Use (PEoU) and perceived usefulness PU as fundamental determinants of technological application where an individual's intention to use an application is predicated and explained by once perception of the technological usefulness and its simplicity(Hart O et al 2012)

Perceived Ease of use refers to the level of degree where an individual believes that using a particular system would be free of physical and mental effort. It measures the prospective

user's assessment of the mental efforts required of the use of target applications (Davis, 1993)

Masinge(2010) conducted a study on the factors influencing the adoption of E- banking services at the bottom of the pyramid (BOP) in South Africa, and added perceived cost, trust and perceived risk constructs TAM. The results of the study revealed that Perceived usefulness (PU), Perceived ease of use (PEOU), perceived cost and customers trust had significant effect on the adoption of E- banking at the bottom of pyramid while Perceived risk (PR) was found to have no significant effect.

Perceived Usefulness (PU) is defined as the extent to which an individual believes that he or she would benefit from using E- banking (Bhatti 2007:Kim, Chan and Gupta 2007) argued that an individual often evaluated the consequence of their behavior and makes a choice based on the desirability of Perceived usefulness(PU). There for, PU will influences their intention to accept and apply a system.

It relates with the cost and time saving and it considered from the perspective of improving service delivery and creating more access to users (Hart O. et al, 2012)

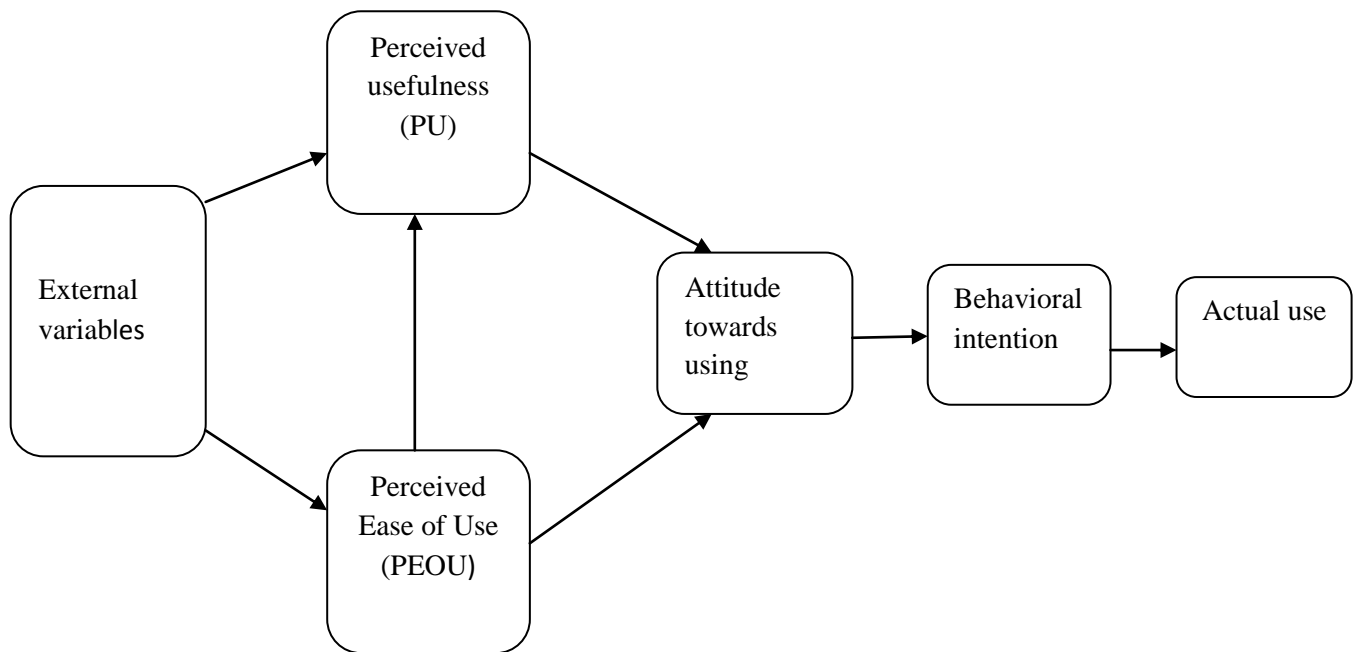


Figure 2.2 Technology Acceptance Model (TAM)

Source: Davis & Venkatesh (1996)

This model is associated with application of e- banking because using of technology have its own advantage and disadvantage (risk) i.e. Perceived usefulness and perceived ease of use and TAM is used to elaborate Perceived usefulness and perceived ease of use associated with the use of IT technology in general and application of E- banking in banking industry.

➤ **Strength**

It is a theory specifically developed for ICT implementation and the other strength of TAM is its simplicity Davis, F.D (1989) which has been achieved by leaving social and organization factors outside the scope of the theory.

➤ **Weakness**

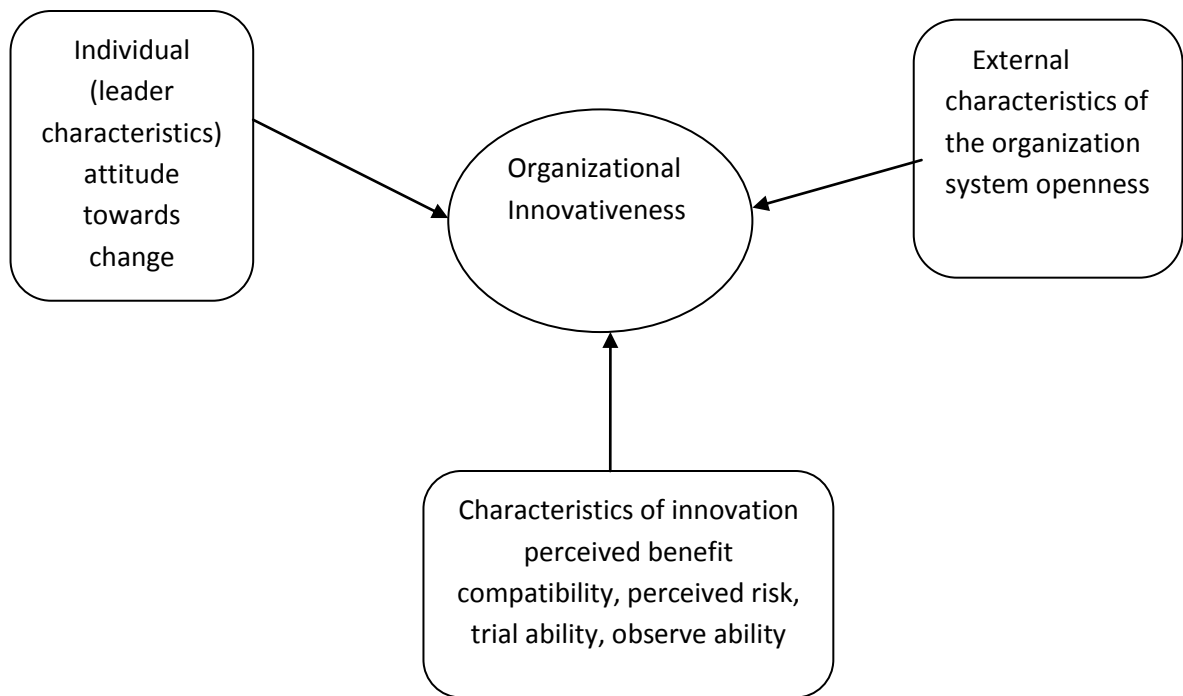
TAM has left out social and organizational factors in its constructs, which are very instrumental in influencing technological innovation and ICT adoption. Also, extending TAM to achieve other variations of TAM such TAM2 or other different models and independent variables may cause a theoretical confusion in which, it may become un clear which version of the many iterations of TAM is commonly accepted one (Benbasat & Barki 2007) Also, the many extensions of TAM did not succeed in deepening the theory in the sense of explaining the essential concepts in greater depth.

Criticisms of TAM as a theory include its questionable heuristics value, limited explanatory power, and lack of any practical value (Chuttur, 2009)

2.7.5 Diffusion of Innovation (DOI)

As Rogers explained DOI is a theory of how, why, and at what rate new idea and technology through cultures, operating at the individual and firm level. DOI theory sees innovations being communicated through certain channels over time and within a particular social system. Individuals are seen as possessing different degrees of willingness to apply innovations, and this is generally observed that the portion of the population applying an innovation is approximately normally distributed over time. Breaking this normal distribution segments leads to the

segregation of individual's in to the following five categories of individual innovativeness(from earliest to latest appliers): innovators, early appliers, early majority, late majority, laggards(Rogers 1995).the innovation process in organization is much more complex. It generally involves a number of individual, perhaps including both supporters and opponents of the new idea, each of whom plays a role in the innovation-decision (Rogers 1995). Based on DOI theory at firm level, Rogers stated innovativeness is related to such independent variables as individual (leader) characteristics, characteristics of innovation, and external characteristics of the organization. As shown in figures 2, individual characteristics describe the leader attitude toward change. Characteristics of innovation including relative advantage (perceived benefit), compatibility, perceived risk, trial ability observe ability. As roger stated the characteristics of innovations, as perceived by individuals, help to explain their different rate of application.



Source: Rogers, 1995

Figure 2.3 innovation of diffusion

Relative advantage (perceived benefit) is the degree to which an innovation is perceived as better than the idea it supersedes. The degree of relative advantage may be measured in

economic term, but social-prestige factor, convenience, and satisfaction are also often important component. It does not matter so much whether an innovation has a great deal of objective advantage. The greater the perceived relative advantage of an innovation, the more rapid its rate of adoption is going to be.

Compatibility is the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters. An idea that is not compatible with the prevalent values and norms of a social system will not be adopted as rapidly as innovation that is compatible. The adoption of an incompatible innovation often requires the prior adoption of a new values system...

Perceived risk is the degree to which an innovation is perceived as difficult to understand and use. Some innovations are readily understood by most members of social system; others are more complicated and will be adopted more slowly.

Trial ability is the degree to which an innovation may be experimented with in a limited basis. New ideas that can be tried on the installment plan will generally be adopted more quickly than innovations that are not divisible.

Observe ability is the degree to which the results of innovations are visible to others. The easier it is for individuals to see the result of an innovation, the more likely they are applying. Such visibility stimulates peer discussion of a new idea, as friends and neighbors of an adopter ask him or her for innovation-evaluation information about it. External characteristics of organization refer to system openness.

➤ **Strength and weakness**

DOI theory has the following strength; DOI represents important advancement over earlier limited effects theory. It drew from existing empirical generalization and synthesized them in to a coherent, insightful perspective. It was consistent with most finding from effects surveys and promotional communication and marketing theories and the campaigns they support even till today.

The weakness of DOI theory is linear and source dominated because it sees communication process from the point of view of elite who has decided to diffuse information or an innovation.

This theory also underestimates the power of media. They mainly create awareness of the new innovations. It assigns a very central role to different types of people critical to the diffusion process. The theory simply says that the media influence innovators or reallyappliers who influence opinion leaders who in turn influence everyone else. Rogers failed to realize that the media can also be used to provide a basis for group discussions led by change agents. Another fall out of this theory is that it stimulates application by groups that do not want the innovation.

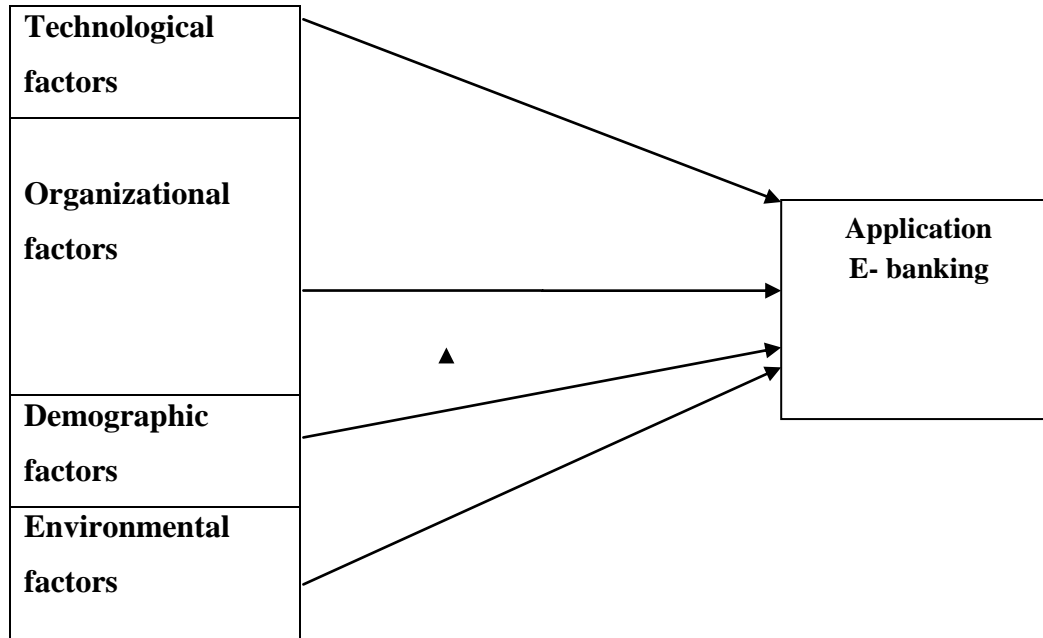
Diffusion of innovations theory is often simplified to focus solely on a product or innovation, disregarding the complex societal, cultural, economic and other factors that determine how the product is applied in to society. Diffusion research focusing on a few select innovations often fails to advance and draw important conclusions on the larger theory.

2.7.6 Rational Choice Theory

Rational choice theory uses a specific and narrow definition of rationality simply to mean that an individual acts as if balancing costs against benefits to arrive at action that maximizes personal advantage. In this theory, all decisions, crazy or sane, are postulated as mimicking such a rational process. Thus rationality is seen as a property of patterns of choices, rather than of individual choices. The basic idea of rational choice theory is that patterns of behavior in societies reflect the choices made by individuals as they try to maximize their benefits and minimize their costs. In other words people make decisions about how they should act by comparing the costs and benefits of different courses of actions. As a result, patterns of behavior will develop within the societies that result from those choices. Rationality, interpreted as wanting more than less of goods, is widely used as an assumption of the behavior of individuals in microeconomic models and analysis. It attaches wanting more to instrumental rationality, which involves seeking the most cost- effective means to achieve a specific goal without reflecting on the worthiness of that goal (Blume & Easley 2008).According to rational choice theory, human beings are promoted by their own goals and preferences. Human actions are regulated primarily by the information regarding the conditions under which a particular individual is going to work and would try to achieve his or her goal. It is almost impossible for the human beings to get what they desire. According to this theory, an individual should have a proper of his or her own selection of goals and consequences of that selection. Rational people always choose only those options that can offer good results (peter, 2004)

2.8 Conceptual framework

Based on the existing theories and ideas in the literature, the researcher formulated an inclusive research frame work and the figure below depicts the dependent and independent variable of the research and relationship among them. The independent variable include technological factors, organizational factors, environmental factors, demographic factors, lack of awareness and trust on the system and application of E- banking is dependent variable.



Independent variable

Dependent variable

Fig.2.8.1 This framework illustrates the interaction between the independent variable and dependent variable (Tornatzky and fleischer 1999).

Chapter Three

3. Methodology

3.1 Introduction

In research design, there are two major methods of research. These are qualitative research and quantitative research. In quantitative research, the aim is to determine the relationship between one thing (an independent variable) and another (a dependent or outcome variable) in a population. Quantitative research designs are either descriptive (subjects usually measured once) or experimental (subjects measured before and after a treatment).

In this research the researcher tries to implement quantitative research method. Designing appropriate research methodology is a prerequisite in order to conduct a good research work. Accordingly, this chapter discussed about the methodology by which the researcher used to conduct the study. Thus, research approach, research design, sampling design, and source of data, data collection methodology, data collection instrument, data analysis method, validity and reliability.

3.2 Research Design

Decisions regarding what, where, when, how much, by what means concerning an inquiry or a research approach study constitute a research design. It 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 procedure. In fact, the research design is the conceptual structure within which research is conducted; it constitutes the blue print for collection, measurement and analysis of data (Kothari's 2004, p 31).

According to Kothari's 2004, descriptive research studies are those studies which are concerned with describing the characteristics of a particular individual, or group. It is used to describe the states of affairs as it exists at present. It can help understand a topic and lead to causal analysis. The desire to know "why" to explain is the purpose of explanatory research. It is a continuation of descriptive research and builds exploratory and descriptive research goes on to identify the reason for something that occurs. Therefore, the researcher employed a mixed research approach

(descriptive and explanatory) for the reason that aims to understand phenomena by discovering and measuring causal relationship of independent variables (Technological factors, environmental factors, organizational factors, demographic factors, lack of awareness and trust on the system) with application of e- banking (dependent variables).

3.3 Research Population and Sampling Design

In this study, the researcher used the sampling by identifying the optimum number of customers currently using e- banking services at branches of CBE in Mizan –Tepi town. Apparently, lists of customers from Mizan main, Gacheb, Tepi main and yeki branches were obtained from the banks data base. And then, following proportionality criteria, the total sample size was further distributed representing the four branches.

3.3.1 Target Population

A population is a group of individuals, objects or items from which sample are taken for measurement. The target population shall comprise of all the e- banking customers of CBE’s branches in Mizan – Tepi town. Respondents selected from a total of 4 branches. Sample size determined based on the number of e- banking customers each branch maintained. It is a common practice in research to use sample in order to generalize about the targeted populations. The study would have totally 22,368 customers from all 4 branches.

3.3.2 Sample Size Determination

Sample size is the number of object which is included in sample. There are several methods for determining the sample size; but I want to use Slovin’s formula to figure out what sample size, I need to take, which is written as:

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

Where n= sample size

N= Population size

e = margin of error tolerance

$$= \frac{22,368}{(1+22,368(0.05)^2)}$$

$$= 392$$

The study conducted on a gross total of 22,368 target population, from which 392 taken as a sample for the study.

3.3.3 Sampling Technique

Convenience sampling used: because e- banking users are randomly distributed in the city, which makes it very difficult to contact each of them individually. Deliberate selection of particular units of the universe for constituting a sample which represents the universe and when population elements are selected for inclusion in the sample based on the ease of access (Kothari's 2004, p 15).The reason for using convenience sampling technique is that to select customers at the working hours of the bank on the counter.

Based on the above formula, three hundred ninety two individual customers are included in the sample as respondents. The proportion allocation method was originally proposed by Bowley (1926). In this method, the sampling fraction($\frac{n}{N}$) is same in all strata. This allocation was used to obtain a sample that can estimate size of the sample with greater speed and a higher degree of precision. The allocation of a given sample size (n) to different stratum was done in proportion to their sizes.

$$i^{\text{th}} \text{ stratum, } n_i = n\left(\frac{N_i}{N}\right) \text{ } i=1,2,3,\dots$$

Where n represents sample size, N_i represents population size of the strata and N population size.

1. Commercial bank of Ethiopia Mizan branch

$$N_1 = n\left(\frac{N_1}{N}\right) = 392\left(\frac{9,221}{22,368}\right) = 162$$

2. Commercial bank of Ethiopia Tepi branch

$$N_2 = n\left(\frac{N_2}{N}\right) = 392\left(\frac{6,443}{22,368}\right) = 113$$

3. Commercial bank of Ethiopia Gacheb branch

$$N_3 = n\left(\frac{N_3}{N}\right) = 392\left(\frac{3,846}{22,368}\right) = 67$$

4. Commercial bank of Ethiopia Yeki branch

$$N_4 = n\left(\frac{N_4}{N}\right) = 392\left(\frac{2,858}{22,368}\right) = 50$$

3.4 Methods of Data Collection

Data collection was done through both primary and secondary sources. The sources of the primary data for this study are customers of CBE in Mizan- tepi town branches who are users of

e- banking channels. The secondary data could be collected from the annual financial statement, various procedure manuals, and strategic documents of CBE and different bank related Magazines (CBE).

The required data and /or information obtained through questionnaire, prepared in the form of both closed and open ended types of questionnaire. While, secondary data were collected mainly from the annual financial statement, various procedure manuals, strategic documents of CBE and different bank related Magazines (CBE) in order to evaluate e- banking services. While collecting primary data, questionnaires distributed to e- banking users while using the services based on their availability by confirming their branches. Questionnaires were assigned by respective code numbers. Respondents fill and complete their responses for each provided questions. After it, the researcher checked and corrected whether or not questionnaires are properly filled. Then, questionnaires were filled and organized for further data processing and the researcher conducted interviews with manager for the purpose of corroborate certain facts, to enhance and supplement the results of questionnaires.

3.5 Method of Data Analysis

Defines data analysis is the process of extracting, compiling and modeling raw data for the purpose of obtaining constructive information that can be applied to formulating conclusion and predicating outcomes or supporting decisions scientifically. The study employed descriptive and inferential statistics such as percentage, frequency and correlation would be used to analyze the data, with the help of statistical package for social scientists (SPSS) version 20.

3.6 Validity and Reliability

Reliability is defined as quality of consistency or reliability of a study or measurement. Kothari (2004), comments that a measuring instrument is reliable if it provides consistent results. That means if the same or different researcher repeats the study it should produce more or less the same results.

Dooley (2005) reliability refers to degree to which observed scores are free from error of measurement. Reliability is gauged by the constancy of scores.

Table.3.1 Cronbach's Alpha-Reliability Test

Reliability Statistics	
Cronbach's Alpha	N of Items
.809	30

Source: survey result, 2020

To ensure internal consistency among the items included in each of the scales, Cronbach's coefficient alpha is estimated. Higher Alpha coefficient indicates higher scale reliability. Specifically, (George & Mallery, 2003) suggested that scales with 0.60 Alpha coefficients and above considered acceptable.

Validity refers to the appropriateness, meaningfulness and usefulness of the specific inferences made from measures (Dooley, 2005). To address the issue of validity, the researcher conducted a pilot study to make sure that data to be collected provide valid information. Questionnaires and interviews questions were tried out in a small sample check on the correctness of the wording, whether the questions measure and if there is any biasness, as well as knowing if the respondents can understand the questions as the researcher intended.

3.7 Ethical Consideration

In this research study, issues relating to the ethical conduct of research such as informed consent, confidentiality, privacy and anonymity were upheld. According to Saunders *et al.* (2009), ethics is the norms or standards of behavior that guide moral choices about our behavior and our relationships with others. Participants and respondents will be given full information on the purpose and objectives of the study in order for them to make informed decisions as to whether to partake or not. Moreover, all information concerning the identity and personality of respondents will be treated with utmost confidentiality. Additionally, all information gathered was used for the sole purpose of this research study.

CHAPTER –FOUR

4. Results and Discussions

4.1 Introduction

This chapter covers the presentation, analysis and interpretation of data collected from primary sources. A total of 392 questionnaires were distributed to customers of commercial bank of Ethiopia Mizan- tepi city branches and in order to collect data about the factors affecting the application of E- banking. Out of the questionnaires distributed 386 usable responses were obtained. Hence, the response rate is 98.5 %.

The study findings are subjected to statistical analysis, which are discussed in more detail, for example, linear regression analysis was used for test of the hypothesis to indicate the extent to which the relationship of the determinants in the application of E- banking services were explained through the use of the mentioned factors in the survey questionnaires under each determinant. Hence, the research results that were collected through the survey questionnaires were analyzed using descriptive statics, regression analysis and correlation analysis that constitute the main findings of the study. All the data were coded and entered in to SPSS version 20 and inferences were made based on the statistical results.

4.2 Demographic profile of respondents

The study participants on survey questionnaires have different personal information: besides these differences they introduce response towards E- banking usage, and the factors that affect E- banking application. The following discussion shows these differences. The demographic profile of respondents, participated in this study was shown in table 4.1 as follow as:

Variable	Classification of variable	Frequency	Percentage
Gender	Male	187	48.4
	Female	199	51.6
Age	Below 20	43	11.1
	21- 30	206	53.4
	31-40	131	33.9

	41-50	6	1.6
	Above 51	-	-
Educational level	Below Grade 12	45	11.6
	Diploma	74	19.2
	Degree	252	65.3
	Master degree and above	15	3.9
Monthly income	Less than Br 2000	54	14
	Br 2000-3999	115	29.8
	Br 4000-4999	141	36.5
	Br 5000-9999	59	15.3
	Above 10000	17	4.4

Source result, 2020

As it shown on the above table, the highest participants in this study were females who represent 51.6% of the respondents. In the case of classification of respondents by age 87.3% of the respondents more or less young (20 years up to 40 years old). In the context of the educational level of the study 65.3% of the respondents are degree holders. On the other hand, 36.5% of the respondents have monthly income ranges between 40000 to 4999 Ethiopian birr. So the respondents of the study are majority of them are females, young, degree holder and relatively middle income level.

4.3 Factors affecting adoption of e- banking in Mizan- Tepi city

Questions were asked to identify perceptions of the sampled customer with respect to factors affecting the application of e- banking services. The following sections discuss about the response of the participants regarding factors affecting the application of e- banking service and respondents response towards factors of the service were identified based on the research model that use the two basic frameworks, technology- organization-environment(TOE) framework and technology acceptance model(TAM).

4.3.1 Demographic factors

Results obtained from survey respondents of the bank customers regarding factors affecting the application of e-banking under determinant demographic factors that focus mainly age, gender,

income and educational level are depicted below using descriptive statistics: Table 4.2 shows the respondents on the demographic factors

Factors	SD	D	N	A	SA	Mean	Std Dev.
	1	2	3	4	5		
Relatively male customers of the bank use E- banking services than female	64	21	15	236	50	3.04	1.123
	16.6%	5.4%	3.9%	61.1%	13%		
High rates of illiteracy affect the easy practice of E- banking	22	14	36	90	224	4.16	1.092
	5.7%	3.6%	9.3%	23.3%	58.1%		
Young customers of the bank use e- banking services than old customers	14	17	35	149	171	4.02	1.053
	3.6%	4.4%	9.1%	38.6%	44.3%		
Customers level of education affect the application of e- banking	27	25	17	47	270	4.33	1.472
	7%	6.4%	4.4%	12.2%	70%		

Source: survey result, 2020

Response indicated in the above table shows that, the respondents were asked on the demographical factors: relatively male customers of the bank use e-banking service than female, high rates of illiteracy affect the easy practice of e- banking, young customers of the bank use e-banking service than old customers, customers' level of education affect the application of e-banking. Therefore, demographic factor are found to be one of the possible factor that affect application of e- banking in the city. The study results consistent with the findings of Beza (2010) and Ayana (2014) who found demographic factors such as gender, age, income and education level have an effect in application of E- banking in Ethiopia banking industry.

4.3.1.1 Technological factors

Based on data gathered from respondents about factors affecting the application of e-banking under the independent variable of technological factors that focus mainly on perceived risk and perceived usefulness aspects of the service are presented below using descriptive statistics:

4.3.1.2 Perceived risk

The perception of the risks regarding e-banking is expected to influences the application and further growth.

Table 4.3 shows participants' response on perceived risk of e-banking service

Factors	SD	D	N	A	SA	Mean	Std Dev.
	1	2	3	4	5		
Security aspects considered as barrier for applying of E-banking	38	20	30	140	158	3.89	1.063
	9.8%	5.1%	7.8%	36.3%	41%		
Customers do not trust the technology of e-banking	62	16	33	206	69	3.44	1.123
	16.1%	4.2%	8.5%	53.4%	17.8%		
Customers fear risk of new technology innovation	17	36	22	255	56	3.91	1.020
	4.4%	9.3%	5.7%	66.1%	14.5%		
Customers do not trust the technology provided by the bank	44	63	8	226	45	3.36	1.119
	11.4%	16.4%	2.1%	58.5%	11.6%		

Source: survey result, 2020

As shown in the above table, the response were scored on a scale of 1-5, with 1 representing the respondents strong disagreement and 5 represents with strong agreement with each of the factors. As the above table indicates that the respondents were agree and strong agree with security aspects considered as a factor for applying E- banking with the mean score of 3.89 and standard deviation of 1.063. Customers do not trust the technology of e- banking is also a factor for applying of e- banking with mean of 3.44 and standard deviation of 1.123. Customers fear risk of new technology innovation is a factor for applying of e- banking with the mean of 3.91 and standard deviation 1.020 and on the same way of respondents response as presented above customers do not trust the technology provided by bank is another factor for applying e- banking with the mean of 3.36 and standard deviation 1.119. Therefore this study identified that lack of availability of physical security are the major factor faces the banking industry in applying E-banking service. The study results appeared to be somehow consistent Zerihun (2016), Matiws (2016) and Ayana (2014) who found security concerns to be the major factor discouraging the application of E- banking services. Moreover, the result is consistent with the findings of Mehmood et.al (2014) suggested that security risk as a primary concern relating to electronic

banking and has a positive and strong relationship with electronic banking application in Pakistan.

4.3.2 Environmental factor

Based on the data obtained from survey of the respondents regarding factors affecting the application of e- banking under the variable of technological factors that focus mainly on ICT infrastructure, legal framework, government support and competition are discussed below using descriptive statistics:

4.3.2.1 National ICT infrastructure

Despite the recent improvements made on the national infrastructure, the overall ICT infrastructure in Ethiopia as well as in Mizan- tepi remains inadequate. Table 4.4 shows that the response of respondents in adequacy national ICT infrastructure

Factors	SD	D	N	A	SA	Mean	Std. Dev.
	1	2	3	4	5		
My bank has adequate ICT infrastructure to conduct e- banking	216	114	20	22	14	1.63	0.807
	56%	29.5%	5.2%	5.7%	3.6%		
The quality of internet connection and mobile network significantly affects e- banking	25	10	7	84	260	4.23	1.298
	6.4%	2.6%	1.8%	21.8%	67.4%		
Ethio Telecom provided high speed internet and mobile connection	193	102	36	32	23	2.91	1.520
	50%	26.4%	9.3%	8.3%	6%		

Source: survey result, 2020

As shown in the Table 4.3 above respondents disagreed on statement that their bank has adequate ICT infrastructure to conduct e- banking (Mean =1.63 and std.dev. 0.807) and Ethio telecom provided high speed internet and mobile connection (Mean =2.91 and std.dev. 1.520). Respondents agreed with the questions of the quality of internet connection and mobile network significantly affects e- banking application (Mean =4.23 and std.dev. 1.298). So, the response of participants implied that national ICT infrastructure is pillars for applying e- banking services. On the other hand customers of the bank stated that, unavailability of well- functioning ICT infrastructure and poor internet service affect the smooth functioning of e- banking service. But recently, Ethiopian government has been doing an improvement of national ICT infrastructure; it

will encourage our bank to practice different technological innovation. This result concedes with Wondwossen and Tsegai (2005) stated that lack of sufficient telecommunication infrastructure is one of the basic factors in the application of E- banking in Ethiopia.

4.3.2.2 Legal and regulatory framework

Table 4.5 shows that the response of the study participants regarding the legal and regulatory framework for the application of e- banking service.

Factors	SD	D	N	A	SA	Mean	Std.Dev.
	1	2	3	4	5		
My bank has regulatory guidelines on e-banking	8	21	17	103	49	3.27	1.404
	4%	10.6%	8.6%	52%	24.7%		
It is difficult to perform e-banking because of absence of suitable and regulatory framework for e-commerce and e- payment	25	36	44	205	76	3.56	1.203
	6.5%	9.3%	11.4%	53.1%	19.7%		

Source: survey result, 2020

As it is depicted on the above table, the responses of the participants agreed with the question their bank has regulatory guidelines on e-banking (mean 3.27 and std. dev. 1.404) and the participants agree with it is difficult to perform e-banking because of suitable legal and regulatory framework for e-commerce and e-payment. (Mean 3.56 and std. dev. 1.203). As the survey result shown in the above lack of legal and regulatory framework affect the application of e-banking. So, lack of legal framework 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 Gadise (2017), she found that lack of legislation is a factor that influence E- banking application in Ethiopia. Unlike this result is in consistent with the previous findings such as Kassahun (2016) and Gardachew (2010).

4.3.2.3 Government support

Government can either directly or indirectly affect the application of e- banking in terms of creating a favorable environment and impetus for banking industry and their customers so that the services can be diffused with the community.

Table 4.6 shows that the response of participants in government supports for application of e-banking as well as for further growth of the service.

Factors	SD	D	N	A	SA	Mean	Std.Dev.
	1	2	3	4	5		
The government promotes e- banking for its citizens	196	118	13	27	32	1.89	1.326
	50.3%	31%	3.4%	7%	8.3%		
The government providing necessary infrastructural facilities (road, electric power, telecommunication and etc.) to remote area of the country in order to facilitate e- banking application	216	76	17	23	54	1.98	1.202
	56%	19.7%	4.4%	5.9%	14%		

Source: survey result, 2020

As shown on the above table, respondents were asked the government promotes e- banking services for its citizen: majority of the respondents disagreed (Mean=1.89 and std.dev. 1.326) and also disagree with government providing necessary infrastructural facilities (road, electric power, telecommunication and etc.) to remote areas of the country in order to facilitate e-banking application (Mean=1.98 and std.dev. 1.202). Based on the survey result lack of government support is an inhabiting factor for the application of e- banking. Similarly study of Ayana (2012) noted that government initiatives are the most significant factors determining the extent and deployment of E- business adoption.

4.3.2.4Competitive pressure

The competition from domestic private banks appears to be the most important determinant for banking industry to apply and develop e- banking and if there is competitiveness between those domestic private banks in order to apply technological innovation further e- banking services develop.

Table 4.7 shows that the questionnaires response on lack of competitiveness among local banks.

Factors	SD	D	N	A	SA	Mean	Std. dev.
	1	2	3	4	5		
There is high competition between local banks on e-banking services	35	56	7	196	92	3.66	1.213
	9.1%	14.5%	1.8%	50.8%	23.8%		
Absence of competition from foreign banks has an influence on e-banking	12	31	4	148	191	4.02	1.124
	3.1%	8.2%	1%	38.3%	49.4%		

Source: survey result, 2020

The responses of the respondents as depicted in the above table, most responders agreed on issues related with there is high competition between local banks in order to apply new technological innovation regarding e- banking services with the mean value of 3.66 and std. dev. 1.213 and also the respondents agreed that absence of competition has an influence on e- banking with the mean value of 4.02 and std. dev. 1.124. This implies that absence of competition in order to apply new technological innovation for customers has an influence on application of e-banking. The study result is consistent with the findings of Ayana (2012) who found Ethiopia banking industry did not consider about competition with foreign banks and such policies could discourage banking sector of the country from the application of E-banking system. The above all environmental factors of the study results are consistent with the finding of Beza (2010) ; Tilahun (2016); Ayana (2012) and Gadise (2017) who found that environmental factors has an influence application of E- banking system.

4.3.3. Organizational factors

In this section the researcher aimed at investigating the influence of organizational factors with a tendency of applying e- banking that focus mainly on finance and human resources aspects of the service are shown below using descriptive statistics:

4.3.4.1. Financial resources

According to Kuan 2001 and Iacovou 1995 financial resources are an important factor in facilitating innovation implementation for any organization and they are often correlated with the firm size.

Table 4.8 shows the study explored regarding unavailability of financial resources

Factors	SD	D	N	A	SA	Mean	Std. dev.
	1	2	3	4	5		
Implementing technological innovation requires high investment cost	15	6	40	193	132	4.26	0.841
	3.8%	1.5%	10.3%	50%	34.2%		

Source: survey result, 2020

The above table indicated that out of 386 respondents strongly agree and agree 132 and 193 respectively which means around 84.2% with statement of implementing technological innovation requires high investment cost having the mean value of 4.26 and standard deviation of 0.841. The study result shows that the unavailability of financial resources affects the application of e- banking services.

4.3.4.2. Human resources

Like to financial resources, human resources also important factors in application of new technology. The results of the study presented in table 4.9 regarding availability of skilled human resources in order to apply e- banking services.

Factors	SD	D	N	A	SA	Mean	Std. dev.
	1	2	3	4	5		
Banks require skilled human resources in order to implement e-banking	25	31	48	112	170	4.11	1.018
	6.5%	8.1%	12.4%	29%	44%		
Banks require skilled IT personnel's in implementing technological innovation	4	25	31	130	196	4.39	0.921
	1%	6.5%	8.1%	33.4%	51%		
Technical and managerial skills of	21	25	34	113	193	4.21	1.029

staffs on using technological innovation have influence on application of e- banking	5.5%	6.5%	8.7%	29.3%	50%		
Unavailability of competent and skilled employee in related with e-banking is the factor for banks to apply e- banking	31	38	26	109	182	4.12	1.021
	8.1%	9.8%	6.7%	28.2%	47.2%		

Source: survey result, 2020

The result presented in the above table, shows that the respondents were asked for the questions of banks require skilled human resources in order to implement e-banking that mean score of 4.11 and standard deviation 1.018 and also respondents agreed with value of 112 and 170 respectively around 73% out of 386 respondents. Banks require skilled IT personnel's in implementing technological innovation with the mean value of 4.39 and standard deviation 0.921 and out of 386 respondents around 84.4% agreed on the factors. Technical and managerial skills of staffs on using technological innovation have influence on application of e-banking with the mean value of 4.21 and standard deviation 1.029 in which 29.3% and 50% of the study participants were agreed and strongly agreed respectively. Unavailability of competent and skilled employee in related with e-banking is a factor for banks to practice e-banking with the mean value of 4.12 and standard deviation 1.021 in which 28.2% and 47.2% of the study participants responds that they agree and strongly agree respectively. Therefore as the survey reveled in the above human resources are the factor for the application of e- banking. The study results are consistent with the finding of Tilahun (2016) who found both human resources and financial resources have an effect in order to applying E- banking in Ethiopia.

4.3.4.5Lack of awareness

Results obtained from survey respondents regarding their perception towards awareness associated with application of e-banking service using descriptive statistics are depicted below:

Table 4.10 shows the respondents perception towards awareness

Factors	SD	D	N	A	SA	Mean	Std. dev.
	1	2	3	4	5		

I have enough information about electronic banking	136	208	6	29	7	1.81	0.802
	35.4%	53.8%	1.5%	7.5%	1.8%		
The banks provides help on its website to use e-banking	76	132	52	93	33	2.71	1.269
	19.7%	34.2%	13.5%	24.1%	8.5%		

Source: survey result, 2020

Various researchers' literature and finding shows that awareness of customers on the services being delivered determines the implementation and usage of the service. Whenever customers aware of the service provide it is easy to implement the product and vice versa. As indicated in table above the findings of the study indicate that out of total sample population of customers were strongly disagreed and disagreed on the respondents asked for the questions of I have enough information about e-banking services with the mean value of 1.81 and standard deviation 0.802. Similarly respondents were strongly disagreed and disagreed on the questions that banks provide help on its website to use e-banking with the mean value of 2.71 and standard deviation 1.269. Based on the survey result majority of the customer have not awareness about e-banking services and the bank does not provide help on its website to use e-banking. The study results are consistent with the findings of Solomon (2016), Yitbarek (2013), Mohammed (2012), Gardachew (2010), Esayas (2016), Beza (2010), Birritu (2015), Asrat (2010), Alemayehu, G and Jacqueline, I (2011) who found lack of awareness has an effect in application E- banking services.

4.3.4.5 Trust on the system

One of the major difficulties in the area of trust building for e-banking is security. In terms of technology, the e- banking transaction channels is very new and needs to build a perception of security among customers. Results obtained from survey of respondents regarding factors affecting the application of e-banking under the determinant of trust on the system service are presented below using descriptive statistics: Table 11 shows the determinant of trust on the system

Factors	SD	D	N	A	SA	Mean	Std. dev.
	1	2	3	4	5		
Customers have high degree of trust on the bank and are satisfied with	181	120	27	18	40	2.16	1.378
	47%	31.1%	7%	4.6%	10.3%		

security of e- banking service provided by the bank							
-----------------------------------------------------	--	--	--	--	--	--	--

Source: survey result, 2020

The study investigated whether the respondents always use e- banking because they are trusted the service offered by their bank, where very secure and they are satisfied with security of e- banking service provided by the bank. The results revealed that 76.1% of respondents did not agree that customers have high degree of trust on the bank and are satisfied with security of electronic banking service provided by the bank with the mean value of 2.16 and standard deviation 1.378. So lack of trust on the system is a factor for the application e- banking. The study results are consistent with the finding of Ayana (2012), Gardachew (2010) and Gadise (2017) who found that trust on the system has an effect on application of E- banking services.

4.4. Benefit of applying E- banking

There are different benefits which, banking industry can attain from application of E- banking system. The benefits identified in this study for banks are improving customers satisfaction, enhancing speed and efficiency, reduce the no of customers arrival to banking hall, while it reduces the work load of bank staffs, create a better relationship between banks and clients, unlimited time access bank account and information, used as better information control and cost savings. Furthermore, E-banking improves the banking activities and has advantage for customers as well as the unintended advantages of the society: higher public production due to improved time management, Better fund management and efficient use of liquidity, quick response to customer complaints and no limit on time and space.

4.4.1 Perceived usefulness

As Katuri, et al., (2003) it is the introduction of e- banking that made its perceived usefulness at the highest degree. Besides, E- banking made the customers to easily access the products of banks everywhere and every time. Table 4.12 shows the result of the study with regards to perceive usefulness of e- banking.

Factors	SD	D	N	A	SA	Mean	Std. dev.
	1	2	3	4	5		
E- banking services are convenient	22	41	16	98	209	2.91	1.703

in terms of time saving	5.7%	10.6%	4.1%	25.4%	54.2%		
E- banking services are accessible	27	28	21	94	216	2.76	1.503
without time limit	7%	7.3%	5.4%	24.3%	56%		

Source: survey result, 2020

As indicating in the above table the respondents agree and strongly agreed that e-banking service is convenient in terms of time saving and similarly they agreed and strongly agree e- banking services are accessible without time limit. This result implies that using e- banking system helps to perform banking activities within a short period of time. This result is in line with study of Zerihun A. (2019), which identifies time saving as a major benefit of implementing e- banking system (Ayana, 2012).

Table 4.13 Applying E- banking

Factors	SD	D	N	A	SA	Mean	Std. dev.
	1	2	3	4	5		
I have used E- banking	96	63	11	116	100	2.82	1.602
	24.8%	16.3%	2.8%	30.1%	25.9%		
I strongly advice the use of E- banking	62	24	11	189	100	3.41	1.309
	16%	6.2%	2.8%	48.9%	25.9%		
I will increase my use of e- banking	51	2	-	103	230	4.23	1.265
	13.2%	0.5%	-	26.7%	59.6%		

Source: survey result, 2020

For the question that were asked to do you have used e- banking, large number of the respondents 41.1% were replies that disagree and strongly disagree, 2.8% neutral, 56% agree and strongly agree with the mean of 2.82 and standard deviation of 1.602. Moreover, the average response of the participants agreed that they strongly advice the use of electronic banking with the mean of 3.41 and standard deviation of 1.309 and also majority of the respondents agree they will increase their use of electronic banking with the mean of 4.23 and standard deviation of 1.265. The study result shows that majority of the customers do not use of electronic banking due to different factors discussed above but because of their benefit they advice to use electronic

banking and if the government and other concerned body avoided or minimize the above factors to increase their use of electronic banking.

4.5 Correlation analysis

Correlation analysis is a method of statistical evaluation used to study the strength of a relationship between two, numerically measured, continuous variables. The particular type of analysis is useful when researcher wants to establish, if there are possible connection variables. It's often misunderstood that correlation analysis determines cause and effect, however this is not the case because other variable that are not present in the research may have impacted on the results. So, the researcher uses correlation to analysis the direct and inverse relationship between the variables each other. The value of correlation (r) is always in between minus one and plus one (-1and+1). The sign of the correlation coefficient determines whether the correlation is positive or negative. The magnitude of the correlation coefficient determines the strength of the correlation. Table 4.14 shows the result of the study by using correlation matrix

Correlations

		Awareness	Environmental factors	Organization al factors	Technologi cal factor	Demograp hic factors	Trust on the system
Awareness	Pearson Correlation	1	.634	-.037	-.192	.070	.436
	Sig. (2-tailed)		.000	.346	.004	.189	.000
	N	386	386	386	386	386	386
Environment al factors	Pearson Correlation	.547	1	.096	.146	.291	.536
	Sig. (2-tailed)	.000		.066	.009	.000	.000
	N	386	386	386	386	386	386
Organization al factors	Pearson Correlation	-.047	.073	1	.657	.086	.591
	Sig. (2-tailed)	.340	.066		.000	.000	.000
	N	386	386	386	386	386	386
Technologic al factors	Pearson Correlation	-.162	.244	.657	1	.628	.493
	Sig. (2-tailed)	.006	.044	.000		.000	.000

	N	386	386	386	386	386	386
Demographic factors	Pearson Correlation	.247	.391	.096	.720	1	.574
	Sig. (2-tailed)	.467	.000	.000	.000		.000
	N	386	386	386	386	386	386
Trust on the system	Pearson Correlation	.436	.524	.691	.393	.574	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	386	386	386	386	386	386
Application of e-banking	Pearson Correlation	.693	.763	.625	.714	.813	.527
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	386	386	386	386	386	386

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

Source: survey result, 2020

Refer Table 4.13 correlation determines the relation between two variables. The relation to be measured in this survey is of a dependent variable and independent variables. The independent variables are lack of awareness, trust on the system, technological factors, demographic factors, organizational factors and environmental factors. This research is measuring the relation of these independent variables of the dependent variables which is E- banking application in Mizan- tepi city (Ethiopia).

According to the above correlation matrix, all the Pearson correlation coefficients are significant because all the sig value is less than the 5% level of significant. Therefore the correlation between application of e- banking and awareness is positive and significant. The value of correlation is 0.693 which is significant. Hence, e-banking application has a positive correlation with awareness.

Application of e-banking has positive and the most significant relation with environmental factors. The value of correlation is 0.763 which is strong correlation.

The relationship between e-banking and organizational factors is positive and significant. The value correlation is 0.625 which is positive and significant relationship but not as strong as a relationship of environmental factors with e-banking application.

E-Banking application has a positive and the most significant relationship with technological factors with a correlation value of 0.714 as compared to other variables but not as strong as other variables (Environmental factors and demographic factors)

Demographic factors has a positive relationship with the application of E- banking which the most significant relationship with have strong correlation value of 0.813and trust on the system has also a positive and significant relation with the value 0.527.

Table 4.15 Summary of hypothesis testing

Hypothesis	Independent Variables	r- value	P- value	Hypothesis status
H1	Technological factors	0.714	.000	Accepted
H2	Environmental factors	0.763	.000	Accepted
H3	Organizational factors	0.625	.000	Accepted
H4	Demographic factors	0.813	.000	Accepted
H5	Awareness	0.693	.000	Accepted
H6	Trust on the system	0.527	.000	Accepted

The outcomes of correlation matrix reveal that there is strong positive relationship between demographic factors and E- banking application. Demographic factors has the highest association (correlation coefficient, 0.813) followed by environmental factors (correlation coefficient, 0.763) and technological factors (correlation coefficient, 0.714).Awareness have positive and significant relationship with E- banking (correlation coefficient, 0.693) followed by organizational factors (correlation coefficient, 0.625).Trust on the system has the lowest association with the application of electronic banking (correlation coefficient, 0.527).

4.6. Inferential statistics

4.6.1. Regression analysis: variables that affect the application of E-banking

Regression analysis is the statistical technique that identifies the relationship between two or more quantitative variables: a dependent variable, whose value is to be, predicated independent variables about which knowledge is available. It clearly indicates the cause and effect

relationship between the variables. In regression, the variable corresponding to cause is taken as independent variable and the variable corresponding to effect is taken as dependent variable.

Table 4.16 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.816 ^a	.769	.723	.367

- a. Predictors: (Constant), Technological factors, environmental factors, technological factors, lack of awareness and trust on the system
- b. Dependent variable: Application of EB

Source :Survey result, 2020

Table 4.15 the above model summary table presents analysis for the application of E-banking. The model summary table helps to measure appropriateness of the regression model employed. The model summary shows that, the independent variable (technological factors, organizational factors, demographic factors, environmental factors, lack of awareness and trust on the system) explained application of e- banking with an R Square of value of 0.769(76.9%). This implied that there is a significant relationship with the application of e- banking. Furthermore, the value of R=0.816 which is greater than 0.50 indicates there is a strong correlation between the independent variable and dependent variable together with effect on the dependent variable of 76.9% (R- Square 0.769). The remaining 23.1% is explained by other variable out of this model.

Table 4.16 ANOVA-Analysis for the application E-Banking

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	156.323	6	29.467	36.349	.000 ^b
	Residual	257.123	379	.676		
	Total	413.446	385			

- a. Predictors: (Constant), Technological factors, environmental factors, technological factors, lack of awareness and trust on the system
- b. Dependent variable: Application of EB

Table 4.15 the above model ANOVA table presents analysis for the application of E-banking and helps to measure appropriateness of the model fitness employed.

Based on the regression results in the above table, the significant value is 0.000 which is less than thus the model is statistically significant in predicating is there relationship between independent variables and application of e banking. The F critical at 5% level of significance was 3.43. Since the F Calculated greater than the F Critical (36.349). Therefore, the result supported appropriateness of the model fitness employed.

Table 4.17 Application- coefficients

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.321	.416		.686	.333
1 Awareness	.403	.065	.443	6.606	.000
Environmental factors	.032	.194	.428	5.098	.047
Organizational factors	.162	.096	.136	2.506	.009
Technological factors	.111	.123	.065	2.901	.036
Demographic factors	.185	.099	.132	-1.773	.049
Trust on the system	.423	.091	.241	3.552	.001

a. Dependent Variable: Application of EB

Source: survey result, 2020

The model coefficient table 4.26 reports the t- statistic value for awareness is 6.606 and the significance level is 0 along with a beta of 0.403. If the t- statistic value is greater than 2 or less than -2 and the significance level is lesser than 0.05 and thus, awareness has an effect on the application of E- banking.

The t- statistic value for environmental factor is 5.098 which are greater than 2; beta is .032 and the significance level 0.047 which is less than 0.05. Therefore an environmental factor has an effect on the application of E- banking.

The t- statistic value for organizational factors 2.506 which is greater than 2, beta is 0.162 and the significance level 0.009 which is less than 0.05 which means an organizational factor has an

impact in order to apply E- banking. Since the P value (.009) is less than the defined level of significance (0.05) there is statistically significance factor on the application of E- banking services.

The t- statistic value for technological factors 2.901 which is greater than 2, beta is 0.111 and the significance level 0.036 which is less than 0.05 which means technological factors has an impact on the application of E- banking. Since the P value (.036) is less than the defined level of significance (0.05) there is statistically significance factor on the application of E- banking services.

The t- statistic value for demographic factors -1.773 which is less than 2, beta is 0.185 and the significance level 0.049 which is less than 0.05. Demographic factors such as age, gender, income and education level has an impact on application of E- banking system. Since the P value (.049) is less than the defined level of significance (0.05) there is statistically significance factor on the application of E- banking services.

The t- statistic value for trust on the system 3.552 which is greater than 2, beta is 0.423 and the significance level 0.001 which is less than 0.05 which means customers trust on the services has effect with application of E- banking.. Since the P value (.001) is less than the defined level of significance (0.05) there is statistically significance factor on the application of E- banking services.

Based on the results of the above regression coefficient environmental factors, demographic factors and technological factors are the most significant and Organizational factors, trust on the system and lack of awareness are significant. Therefore all factors have a positive impact on application of E- banking.

Chapter Five

5 Summary of findings, conclusion and recommendation

5.1 Introduction

This study intended to assess the factors that affect the application of e- banking services in Mizan- tepi city in case of commercial bank of Ethiopia in four branches namely Tepi branch, Yeki branch, Gacheb branch and Mizan branch. So the purpose of this chapter is to delineate the summary of finding in section 5.2, followed by conclusion in section 5.3 and presents some recommendation forwarded in section 5.4.

5.2 Summary of findings

The main objective of this study is to explore factors that affect the application of e- banking services in Mizan- tepi and the researcher tries to identify the most variable factors and to study each variables relation and effect on electronic banking services.

- The study clearly shows the most variables factor is lack of awareness, Technological factors, environmental factors, Demographic factors, Organizational factors and trust on the system have valuable or direct and indirect relationship on applying electronic banking.
- Perceived risk and perceived benefit from technological innovations used by banking industry are described in the study as technological barriers in order to apply e- banking and like lack of legal framework, lack of ICT infrastructure, poor network coverage in the city and internet connectivity described in the environmental barriers that enforce the banking industries to apply such technological innovation.
- Additionally, lack of government support and lack of competition among governmental as well as private banks also a barrier for the development of e- banking from infant or embryonic stage to maturity stage. Financial and human resources are considered as organizational factors.

- Majority of the respondents agreed on applying technological innovation requires high investment cost, Banks requires skilled human resources in order to apply e-banking and lack of technical and managerial skills to implement the applied technology as a barrier for the application electronic banking system.
- In other scenario lack of awareness among the people about the benefit, procedure as well as facility about e- banking is another barrier to apply e- banking. Customers have not enough information about e- banking services and the bank does not have provided help on its website is considered as a factor affecting e- banking services. Like lack of awareness trust on the system is also another scenario factor in order to apply e- banking.
- Most of the respondents also said that trust is the biggest hurdle of e- banking and they preferred convectional banking because they have lack of trust on online security like mobile banking and internet banking. Furthermore, they have a perception that online transaction is risky due to which frauds can take place. Demographic factors like gender, age and educational level also affect the application of e- banking.
- The study also identified benefits of e- banking application, such as saving time and cost of users, increased productivity due to good time management, improves customer services, simplify banking activity for staff, reduce bank hall queue, accessible without time limit and place.

5.3 Conclusion

The findings of the research demonstrate that electronic banking constructs are measured by awareness, organizational factors. Technological factors, environmental factors, demographic factors and trust on the system. The result of empirical testing show the immediate and huge impact of electronic banking constructs are environmental factors, technological factors and demographic factors those barriers are solved an opportunity for speedy expansion at lower cost by leveraging on the existing investment of retail agents through implementation of information and communication technology.

E- banking are not well applied by CBE of Mizan- tepi city branches due to environmental factors, lack of customers trust on the system, demographic factor, awareness towards the technology and customers fear to use the technologies that holds banking industry to apply the

system. On the other hand the study reveals that the prevailing technical and managerial skills available in banking industry towards applying the e-banking. Culture of the society, reluctant to change, high level of illiteracy are found to be limited to influence the technological application. The findings of this research hold practical implications for those banks as well as other financial organizations providing Electronic banking. For example, on the basis of findings of the study, it suggested that the organization should upgrade the existing system of security and the government establishing a clear set of legal and regulatory frame work on the use of technology and the banks create awareness by providing sufficient information on the advantage of electronic banking.

On the other hand the findings have academic implications. There are few studies conducted on electronic banking application in Ethiopia we can say totally no in Mizan- tepi before as already mentioned in the research. This research is trying to explain how significant factors such as demographic, technological and environmental factors are important in applying electronic banking in Mizan- tepi. This research contribution to the theory is based on experimental data and information from the electronic banking users in Mizan- tepi regarding the purpose of studies and this research forms a theory in itself and shows the final effect all factors on electronic banking. Hence, this research can be reference for future.

5.4 Recommendations

The following recommendations are suggested against the finding of the study:

Organizational factors such as human and financial resources have significant factors in applying E- banking. So, CBE of Mizan-tepi city branches should evaluate customer service excellence level and provide training to branch managers and district staff in order to develop managerial and technical skills on implementation of e- banking.

Environmental factor have significant effect for applying electronic banking such factors include regulatory and legal framework. Therefore, e- banking should be developed by the government and national bank of Ethiopia and the existing framework lacks rules and regulations, so the regulations needs amendment and improved. It is advisable for CBE of Mizan-tepi city branches to introduce a well- organized information system about e- banking

Lack of awareness is significant factors in applying electronic banking. Therefore, CBE of Mizan-tepi city branches should create awareness and issues such as fear of the lack of privacy

and security about electronic banking products effectively and efficiently: by providing sufficient information on the advantage of e- banking.

Security issues are one of technological factors and So, CBE of Mizan-tepi city branches should strength the security of electronic banking as we observed from the investigation of this study customer's fear of security: in order to minimize the security risk the bank should secure end to end data gateways, security access should be established with applications.

As the model environmental factors include an adequate development level and quality of a national ICT and telecom infrastructures and without this infrastructure applying e- banking is meaningless. So the government has to support banking industry by investing on ICT infrastructure development, providing necessary infrastructure like electricity, road and telecom services especially rural area of the country.

Further research

Future research is recommended to focus on how capital availability, social, cultural factor advancement science and technology as well as economic conditions affects the application of E-banking, since they can be powerful that effect for E- banking application.

For future research, other researcher should explore about this topic and make sure that all the information regarding e- banking can be used and can help the customers and the banks to choose the best way.

Another research direction involves risk perception as a component of trust management. As an essential element of e- banking, trust encompasses a variety of managerial and technological issues. A systematic understanding of risk perception in the broader context of trust management will establish a clearer link with overall business strategy.

Replicating the study in areas other than banks would provide a more solid basis to generalize the findings reported in this paper. Consumer's cognitive activities are constrained by the cultural environment.

Reference

- Alagheband, 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/LTUPB-EX-064SE.pdf> viewed 10 September 2011
- Alemayehu, G and Jacqueline, I 2011, Remittance Market in Africa, Ethiopian case, book chapter, 113- 132
- Ankit, S 2011, Factors influencing online banking customer satisfaction and their importance in improving overall retention levels: An Indian banking perspective.
- Asrat, S 2010, Reporter weekly newspaper
- Alex Alecheni O. Peter; Factors Affecting the Adoption of internet banking services in Nigeria, Eastern Mediterranean University July, 2015 Gazimaguzu, North Cyprus.
- Ayana Gemechu Bultum, 2014, factors affecting adoption of electronic banking system in Ethiopian banking industry, Journal of Management information System and E- commerce, 6(1)
- Azouzi D(2009) the adoption of electronic banking in Tunisia: An exploratory. Journal of Internet Banking and commerce 14:11.
- Barasa, D.A. and Mwirigi, F.M (2013), The role of Agency Banking in enhancing financial sector Deepening in Emerging Markets: Lessons from the Kenyan Experience: Journal of Business and management, vol.5, No,21.
- Beza M. 2010, Assessment of the opportunities and challenges for the adoption of E- banking service in Ethiopia , (A study with reference to selected commercial banks), MBA thesis Mekelle University
- Birritu, 2015, National bank of Ethiopia, No. 119, February
- Buckle M. and Beccalli E., 2008, Principle of banking and finance, United Kingdom university of London.
- Business in Ethiopia, Dashen bank payment news, Dashen bank (www.dashenbanksc.com), retrieved on April, 2010.
- Chan, S.C, 2004, Understanding internet banking adoption and use behavior: A Hong Kong perspective, Journal of global information, 12- 43.
- Devadevan V (2013), Mobile banking in India- Issues and challenges. International Journal of Emerging Technology and Advanced Engineering 3: 516-520

- Driga, I. and Isac, C. 2014, E- banking Services- features, challenges and benefits, Annals of the university of Petrosani, Economics, 14(1), 49-58.
- Edwin MA, Ailemen IO, Okpara A, Mike OA (2014) Impediments to e- banking services marketing in developing countries- A case study of Nigerian banks. European Journal of Business and social Sciences 3: 228-248.
- Esayas, T. 2016, Factors affecting intention to use e- banking products at bank of Abyssinia (in case of Addis Ababa branches). Thesis, Addis Ababa
- Furst, K. and Nolle, D. 2002, Internet banking: developments and prospects, working paper from office of the comptroller of the currency, Administration of National banks.
- Francisco Munoz-Leiva, Teodoro Luque-Martinez, Juan Sanches-Fernandez, (2010) “How to improve trust toward electronic banking”, Online Information Review, Vol.34 issue: 6, pp.907-934, <http://doi.org/10.1108/14684521011099405>
- Friedman, B.K. 2000, Trust online communication of the ACM
- Gardachew, W. 2010, Electronic banking in Ethiopia: opportunities and challenges; Journal of internet banking and commerce, 15(2):2-9
- Ho, S. and Ko, Y. 2008, Effects of self- services technology on customer value and customer readiness: The case of internet banking, Internet research, Vol.18 (4)
- Imola, D. and Claudia, I. 2014, E- banking services – features, challenges and benefits. Romania University of Petrosani
- Kamrul, H. 2009, E- banking in Bangladesh: The future of banking, School of Business
- Karimzadeha et al, 2014, The effects of electronic banking expansion on profitability of a commercial bank (sepah bank of Iran). Indian Journal science research 4(6), 305-312.
- Kothari, C. 2004, research methodology, methods and techniques, New Delhi: New age national (P) limited
- Laforet S, Xiaoyan Li, (2005) Consumers attitude towards online and mobile banking in China. International Journal of Bank Marketing 23: 362-380
- Luarn, P. 2004, Towards an understanding of the behavioral intention to use mobile banking computers in human behavior, 1-19.
- Malak, J 2007, Readiness of the Palestine banking sector in adopting the electronic banking system: exploratory study, MA thesis, The Islamic university of Palestine.

- Matiwos, K. 2016, challenges and prospect of e- banking in Ethiopia, MBA thesis in Addis Ababa
- Mohammed S (2012) Factors affecting ATM usage in India: An empirical analysis. UTMS Journal of Economics 3: 1-7
- Mols, N. 1998, The behavioral consequences of PC banking, international journal bank market, 16 :(5):1995-201
- Ogare, H. 2013, The effect of electronic banking on the financial performance of commercial banks in Kenya, MBA Thesis, University of Nairobi
- Shah, M. and Clarke, S. 2009, E- banking management issues, solutions and strategies, New York, Hershey
- Shariq, Mohd 2012, Factors affecting ATM usage in India: An Empirical analysis UTMS journal of economics Macedonia 3(1), pp 1-7
- Solomon, W. 2016, Role of electronic banking on financial performance of commercial banks in Ethiopia Thesis, Addis Ababa
- Rogers, E. M. & Shoemaker, F.F (1971), Communication of Innovation: A cross cultural approach (second Ed. Of Diffusion of innovations) New York: Free press
- Tilahun, D. 2016, Effects of electronic banking on the financial performance of commercial banks in Ethiopia Thesis, Addis Ababa
- Yitbarek T, Zeleke S (2013) Analysis of factors influencing customer's intention to the adoption of e- banking service channels in Bahir Dar city, Ethiopia: An integration of TAM, TPB and PR European Scientific journal 9: 402-417.
- Wondwossen, T. and Tsegai G. 2005, E- payment challenges and opportunities in Ethiopia, economic commission for Africa: Addis Ababa Ethiopia
- Zerihun A. 2019, Assessing the determinants for the Adoption of E- banking services: the case of Dashen bank: Financial studies

APPENDICES

Appendix-A

Jimma University College of Business and Economics

Department of Management- MBA Program

Dear Respondent

I am a graduate student at Jimma University College of business and economics. The Aim of the study is partial fulfillment of Master of business Administration in management. The issue of questionnaires is to obtain your perceptions, opinion and views on *factors affecting the application electronic banking in case of CBE Mizan- tepi city branches*.

Further I would like to stress that all information you provide will be treated in strict confidence and is solely will be used for academic purposes. A copy of the final report will be availed to you upon request. Lastly, I would like to express my sincere appreciation for you time, honest and prompt responses.

Thank you.

Firew Bekele

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General Instructions

- Please read each questions and circle your appropriate response
- No need of writing your name
- For questions that demand your opinion, please try to honestly describe your responses on the space provided.

Df3	Young customers of the bank use e- banking services than old customers					
Df4	Customers level of education affect the application of e-banking					
3 -Trust on the system						
Tr1	Customers have high degree of trust on the bank and are satisfied with security of electronic banking					
4- Awareness						
Aw1	I am aware of that my bank offers electronic banking services					
Aw2	The bank provides help on its website to use e-banking and the various available services					
5 -Environmental factors						
Ef1	Poorly developed ICT infrastructure affect the application of E-banking					
Ef2	Low level of internet penetration and mobile network affects the application of E- banking					
Ef3	Ethio Telecom provided high speed internet and mobile connection					
Ef4	My bank has regulatory guidelines on E-banking					
Ef5	Lack of suitable legal and regulatory framework is a factor for applying E-banking					
Ef6	The government promotes E-banking for its citizens					
Ef7	Lack of sufficient government infrastructural support such as road, electric power, telecommunication and etc. to remote area of the country affect the application of E- banking					
Ef8	There is high competition between local banks on E-banking					
6-Organizational factors						
Of1	High cost of the software and devices limits banks not to apply the E-banking service					
Of2	Lack of skilled man power to implement E- banking system make costly to introduce the system					
Of3	Banks require skilled IT personnel's in implementing technological innovation					
Of4	Lack of technical and managerial skills on the use of technological innovation have influence on application of E-banking					
Of5	Unavailability of competent and skilled employee in related with E-banking is a factor for banks to apply E- banking					
7- Application						
Ad1	I have used e- banking					

Ad2	I strongly advise others to the use e- banking					
Ad3	I will increase my use of e-banking					

If you have Any Suggestions that you would like to give on E- banking?

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