

**FACTORS AFFECTING CUSTOMERS' ADOPTION OF
ELECTRONIC BANKING SERVICE (IN THE CASE OF
COMMERCIAL BANK OF ETHIOPIA BUTAJIRA TOWNS**

By

ADDISU ALEMAYHU

**A THESIS SUBMITTED TO THE DEPARTMENT OF
MANAGEMENT, COLLEGE OF BUSINESS AND ECONOMICS,
SCHOOL OF GRADUATE STUDIES WOLKITE UNIVERSITY
IN PARTIALS FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION**

**JANUARY 2018
WOLKITE, ETHIOPIA**



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SCHOOL OF GRADUATE STUDIES
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ADMINISTRATION**

JANUARY, 2018

WOLKITE, ETHIOPIA

DECLARATION

I, Addisu Alemayehu declare that this thesis entitled: “factors affecting customers’ adoption of electronic banking service (in the case of commercial bank of Ethiopia Butajira towns)” is outcome of my own effort and study and that all sources of materials used for the study have been duly acknowledged. To the best of my knowledge, this study has not been submitted for any degree in this University or any other University. It is offered for the partial fulfillment of the degree of Masters of Business Administration.

By: Addisu Alemayehu

Signature_____

Date_____

CERTIFICATION

This is to certify that the thesis entitled “factors affecting customers’ adoption of electronic banking service (in the case of commercial bank of Ethiopia Butajira towns”, submitted to College of Business and Economics Department of Management of Wolkite University in partial fulfillment of the requirements for the award of the Degree of Masters of art in Business Administration for (MBA) Compiles with the regulation of the university and meets accepted standard with respect to Originality and Quality.

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ACKNOWLEDGEMENT

First of all, I would like to thank our God, who creates the world and human beings to live on earth. Secondly, I would like to express my sincere gratitude to, my Advisor **Alemseged Gerezgiher** (PhD) and my Co-advisor **Fuad Hussen** for their unreserved comments, advice, suggestions and guidance from the inception to the completion of this study.

I would as well, like to thank to all my friends and deeply grateful to my family specially my sister **Birhane Alemayehu**, my brothers **Mulatu Kassie** and **Amsalu yeshiwas**, who have supported me over the time I was involved in this study. They all have a remarkable contribution for the successful completion of the study. The last but not the least appreciation goes to my beloved mother **Adugna Amanu** for her assistance in my academic endeavor with prayer, support and encouragement that enable me to have a peace of mind during my entire study period.

LIST OF ABBREVIATIONS

ATM	Automated teller machine
AVR	Automated voice response
CBE	Commercial bank of Ethiopia
CSFs	Critical success factors
DIT	Diffusion of innovation theory
E-banking	Electronic banking
E-commerce	Electronic commerce
EFT	Electronic fund transfer
E-payment	Electronic payment
ICT	Information communication technology
IT	Information technology
NBE	National bank of Ethiopia
PC	Personal computer
PEU	Perceived ease of use
POS	Point of sale
PIN	Personal identification number
PSBs	Public service banks
PU	Perceived usefulness
SME	Small and Medium enterprise
SMS	Short message service
SPSS	Statistical package for social science
TAM	Technology acceptance model
ETO	Environment Technology organization

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ABSTRACT

The main objective of the study was to examine the factors affecting customers' adoption of e-banking service in commercial bank of Ethiopia in Butajira towns. In order to achieve the research objectives, the researcher adopted mixed research approach. Specifically, the techniques in the study included questionnaire, structured interviews and secondary data. And then, regression and correlation analysis method was used to analyze and interpret the data. There are still many problems that need to be resolved yet in with the adoption of Electronic banking service by customers in Commercial bank of Ethiopia like low level of awareness about the Electronic banking services by customers, shortage of boxes mainly Automated teller machine box which results long linings, low level of promotion for the merits of E-banking services. In order to perfect the development of the adoption of electronic banking service by customers in commercial bank of Ethiopia Improvements in the level of security risk, national Information and communication technology infrastructure, and attitude of customers are required to ensure client confidence.

Key Word: E-banking, adoption, usefulness, eases of use, risk, ICT infrastructure and attitude

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Banks are important in every country and have a significant effect in supporting economic development through efficient financial services. They provide a mechanical system to group saving and convert them into investment. For decades, banks have been affected by changes associated with globalization and financial liberalization. Reacting to these changes, banks expand the choice of services offered to the customers and increase their reliance on technology (Al-Smadi & Al-Wabel, 2011).

Technological advancement and growing competition for effective service delivery has necessitated the implementation of self service at different levels. Such demands have not spared the financial sector which is required to carry out service delivery with minimum delay and at lower cost (Tan & Teo, 2000). The emergence of Internet technology, particularly the World Wide Web has introduced new ways for doing business. Banking is not an exception to it. Internet is increasingly used by banks as a channel for receiving instructions and delivering their products and services to their customers. This form of banking is generally referred to as Internet Banking, although the range of products and services offered by different banks vary widely both in their content and sophistication. Internet banking allows customers to interact more with the front office operations and at the same time, it allows the bank to concentrate the back office operations by increasing their efficiency (Corrocher, 2002).

Banks have used electronic channels to do banking operations with both domestic and international customers. Currently, banks are mostly using electronic channels to receive instructions and deliver their products and services to their customers. Although the ranges of services provided by banks over the electronic channel vary widely in content, this form of banking is generally referred to as electronic banking (Azouzi, 2009). Burr (1996) described e-banking as an electronic connection between the bank and customer in order to prepare, manage and control financial communication or transactions.

According to Giglio (2002) and Robinson (2000), online banking is the cheapest way of delivering banking products. Karjaluoto *et al.* (2002) suggests that online banking services helps

to reduce the branch banks networks. In addition the staffs working for the banks and customers are satisfied to use the online banking services as it will save a lot of time and effort to go to branch of bank and perform these transactions. Therefore, the main reason behind accepting the E-banking system is that, the saving of time and cost and freedom from the place (Polatoglu&Ekin, 2001). .

It should be noted that E-banking can bring about various benefits for banks and their customers as well. It is obvious that cost savings, efficiency, gaining new segments of customers, improvement of the bank's reputation and better customer services and satisfaction are primary benefits to banks (Jayawardhena& Foley, 2000). In addition, setting up a specialized E-banking infrastructure costs about US \$1 to \$2 million, this is much lower than setting up a banking branch. Moreover, Sheshunoff (2000) contends that one of the most important factors influencing the adoption of E-banking by banks is the need to build up strong barriers to customer exiting. Under the view of the author, once customers become familiar with the utilization of full service E-banking, it is unlikely that they will change to another financial institution.

Furthermore, E-banking is not only brings about benefits to banks but also to their customers. Thanks to the emergence of the Internet, banking transactions are no longer limited to time and geography. It is very easy for consumers throughout the world to access to their bank accounts 24 hours per day and seven days a week. Customers can enjoy a variety of services, especially services which are not provided by traditional bank branches (Pham, 2010). It is argued that one of the greatest benefits that E-banking brings about is that it is not expensive or even free for customers to utilize E-banking products/services. Turban (2008) contended that, E-banking is beneficial to customers in terms of cost savings, no limit on time and space, quick response to customer complaints, and better services/products. Such benefits are believed to elevate customer satisfaction.

According to Esser (1999), some of the advantages of online banking to the customers are: Customers can easily manage their accounts as they can access their accounts any time of the day. The customers do not also need to visit the bank premise to request for services such checking loan rates, view their transaction history etc.; Customers can set up a standing order to pay bills and can also schedule new bills or stop payment of bills, when the need arise but this is

subject to availability of the internet. Specialized services such as ordering for checks, changing user profile or address can all be done through the online banking

Today e-banking starts a new phase in competition because of its characteristics like speed, efficiency, minimizing the expenses, and gaining benefit of the unique opportunities. Obviously, if the bank's investment rises the profitability, the e-banking usage in banking industry would be beneficial (Torki et al., 2004).

Therefore, the aim this paper is to explain factors that influence the use of electronic banking among the banking customers focusing on CBE in Butajira area.

1.2 Statement of the Problem

In worldwide, the current trend in banking industry is shift from traditional branch banking to electronic banking, which provides many benefits, challenges and also opportunities for the whole banking sector. To improve the effectiveness of distribution channels by reducing the transaction cost and increasing the speed of services, banks have begun to offer e-banking services. Recently, the role of e-banking is increasing in many countries and it has become the way for the development of banking system. It provides wider availability and possibility to reach more customers as well as it offers opportunities to create services processes that demand few internal resources, and therefore, lower cost. From the customers' point of view, e-banking allows customers easier access to financial services and time saving in managing their finance (Almazari & Siam, 2008; Ayrga, 2011; Tan &Teo, 2000).

Indeed, in order to stay competitive, many banks have been prompted to develop marketing and information technology strategies due to the emergence of e-banking. As Venkatesh, Morris&Davis (2003) noted, the successful implementation of information systems is dependent on the extent to which such a system is used and eventually adapted by the potential users. If users are unmotivated to use that type of technology and it will not bring full benefits to the organization, information system implementation is not likely to be considered successful.

In E-banking system, information transmitted electronically over wireless communication appliances using internet technology. The process of transmitting customers money transaction through internet, raise the issues of perceived risk or uncertainty, which is one of the factors in adoption of new technology, more importantly raise the issue of confidentiality, since the technology is exposed to hackers. Uncertainty arises from a predictive validity of the attributes

(for example functionality and security) that is, how well users of new technology will predict future performance (Cox, 1967). Risk is a subjective determined expectation of loss; the greater the expected probability of loss, the higher the risk perceived (Mitchell, 1999), and thus the lower the motivation to adopt an innovation.

Considering the low extent of development of ICT infrastructure in developing countries, when compared with the developed countries, E-banking has not really been able to diffuse into society given the low rate of internet access (Banji& Catherine, 2004).

For example, the banked population in Zambia has not fully embraced technology as an alternative cheap form of banking because of two major challenges: Firstly, Zambia is still growing its internet infrastructure and accessibility; only 20.4% of the population has access to internet, way below the 28.7% average for Africa and 54.2% average globally. It could be argued that e-banking can only be embraced well with clear laws regulating it and a developed secure telecommunication network. Secondly, even there is a slight increase from 13.9% to 24.8% of adults that were formally banked between 2009 and 2015; one reason for the low level of financial inclusion is the high cost of providing financial services. E-banking offers an opportunity to increase the proportion of the population that accesses formal banking services as it does not require every individual customer to physically enter the banking hall for most bank services (Bruce et.al., 2017).

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. Despite the emergence of E-banking in Ethiopia that 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 and there are more than 30 million mobile users in the country, the role of electronic banking is still at its infant stage (Group Special Mobile Association, 2014). In relation to CBE, despite being the pioneer in introducing ATM based payment system and acquired visa membership, it failed to collect the fruit of its membership and challenged by other competitor banks like Dashen Bank, which worked aggressively to maintain its lead in e-payment system (Gardachew, 2010).

This is because; Ethiopian banks focus on branch network expansion at the expense of e-banking strategies. According to the NBE (2015), out of 16.52 million bank account holders, there are

only 746,050 (5%) e-banking services users. Bambore (2013) and Altum (2014) identified five major factors that affect adoption of e-banking in the Ethiopian banking industry: (a) security risk, (b) lack of trust, (c) lack of legal and regulatory framework, (d) lack of infrastructure, and (e) absence of competition between local and foreign banks. Siraye (2014) found perceived behavioral control plays the most important role in predicting an individual's intention to accept e-banking service channels in the Ethiopian context. Besides, lack of e-business strategies from some CBE branch managers to promote the adoption of electronic banking services is also another specific business problem.

Banks must first ensure that all necessary infrastructure, workforce, and banking functions are in place and working at maximum efficiency that want to offer their services electronically. In addition, in order to motivate customers to use electronic banking, banks must make key improvements that address the customers' concerns. Therefore, it should be of great concern to policy makers, practitioners and scholars that e-banking has not been fully embraced in Ethiopia(Gardachew, 2010).

Therefore, it is necessary to understand the key factors that influence the use of electronic banking among the banking customers.

Research Questions

1. What are the driving forces towards the adoption of e-banking service in the banking industry?
2. To what extent perceived usefulness affect electronic banking?
3. To what extent perceived ease of use affect electronic banking?
4. To what extent perceived risk affect electronic banking?
5. To what extent attitude of customers affect electronic banking?
6. To what extent National ICT infrastructure electronic banking?

1.3 Objective of the study

1.3.1 General objective

The general objective of the study is to identify the driving forces affecting the adoption and use of e-banking service in case of Commercial Bank of Ethiopia.

1.3.2 Specific Objectives

The specific objectives of the study are;

- To assess the relationship between perceived usefulness and customers' e-banking adoption in CBE of Butajira towns.
- To assess the relationship between perceived ease of use and customers' e-banking adoption in CBE of Butajira towns.
- To assess the relationship between perceived risk and customers' e-banking adoption in CBE of Butajira towns.
- To assess the relationship between attitude of customers and customers' e-banking adoption in CBE of Butajira towns.
- To assess the relationship between National ICT infrastructure and customers' e-banking adoption in CBE of Butajira towns.

1.4 Scope of the study

Since there are plenty of commercial bank of Ethiopia branches in the country and the service they deliver is different type, the study targeted on the three CBE branches found in Butajira areas and limited with sample respondents.

1.5 Significance of the study

The results of this research paper will have important contributions to CBE, particularly to those CBE branches to understand the relative benefit of adoption of e-banking services and its impact on profitability of CBE and their customers. Moreover, CBE will obtain valuable information about how customers are satisfied if e-banking service adopted.

1.6 Limitation of the study

This study has been conducted within a limited geographical area (i.e. CBE branches of Butajira town and based on customers in the stated branches). Therefore, it may not have a strong scientific justification and representativeness to generalize about the factors of affecting E-banking adoption in Commercial Bank of Ethiopia. However, the confidentiality of the bank to provide relevant data is high.

1.7 Structure of the paper

The research paper divided into five chapters. Chapter one presents the introduction part, which contains, back ground of the study, statement of the problem, objectives of the study, scope of the study and significance of the study. Chapter two presents the literature review regarding the definition of E-banking, Evolution of E-banking system, frameworks for the research and sets out some empirical studies regarding the issues under investigated. Chapter three is about the methodology, which describes the research approach, research design, sampling design, model specification, data type and source, and data collection and analysis technique. Chapter four is about data presentation, analysis and interpretation, and finally in chapter five, the researcher tried to present the findings, conclusions and recommendations.

Research Hypothesis

The following hypotheses are developed and will be tested in this study, and they are quoted based on the alternative hypothesis (H_0).

H₀1: *Perceived Usefulness* has no significant effect on customers' e-banking adoption

H₀2: *Perceived ease of use* has no significant effect on customers' e-banking adoption

H₀3: *Perceived risks* has no significant effect on customers' e-banking adoption

H₀4: *Attitude of customers* has no significant effect on customers' e-banking adoption

H₀5: *National ICT infrastructure* has no significant effect on customers' e-banking adoption

CHAPTER TWO

2. RIVIEW RELATED LITRATURE

The purpose of this chapter is to review the literature in the area of E-banking adoption and mainly focused on the factors affecting the adopting E-banking system.

2.1 Definition of E-banking

E-banking has a variety of definitions all refer to the same meaning, the following section show some of these definitions. 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). 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). It should be noted that electronic banking is a bigger platform than just banking via the internet.

Banks offer Internet banking in two main ways. An existing bank with physical offices can establish a Web site and offer Internet banking to its customers in addition to its traditional delivery channels. A second alternative is to establish virtual branchless or Internet-only, Bank almost without physical offices. Virtual banks may offer their customers the ability to make deposits and withdraw funds via ATMs or other remote delivery channels owned by other institutions (Furst&Nolle, 2002). In the context of this study E-banking were not considered as only transferring of service by using internet connection rather it considered as multi-channel service provided through ATM, internet banking, Mobile banking (Mod birr system), point sale

terminal and telephone banking. Different forms of E-banking system will be discussed as follows.

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

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

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

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

2.2 The evolution of E- banking system

In traditional banking practice, customers accessed banking products and services through daily physical contact with bank tellers. This approach to delivering banking services created a mismatch between customer demands and bank capabilities because customers could only access financial services at specific locations and during a bank's working hours. With the advent of technological innovations, banks can now deliver their products and services to clients from anywhere and at any time through diverse communication media such as the internet, mobile networks, ATM networks, etc.(Bruce et, al., 2017).

Banks have been significantly affected by the evaluation of technology; competition between banks has forced them to find new market to expand, and the number of financial institutions that offer electronic banking products increased. Hence, banks have begun to offer electronic banking services to improve the effectiveness of distribution channels through reducing the transaction cost and increasing the speed of services. Recently, electronic banking has become the way for the development of banking system, and the role of electronic banking is increasing in many countries (Al-Smadi& Al-Wabel, 2011).

Electronic innovation in banking industry can be traced back to 1970, when the computerization of financial institutions gained momentum (Malak, 2007). However; a visible presence of this was evident to the customers since 1980, with the introduction of ATM. Innovative banking has grown since then, aided by technological developments in the telecommunications and information technology industry. The early decade of the 1990s witnessed the emergence of automated voice response (AVR) technology. By using the AVR Technology, banks could offer telephone banking facilities for financial services.

With further advancements in technology, banks were able to offer services, through PC owned and operated by costumers at their convenience, through the use of intranet propriety software. The users of these services were, however, mainly corporate customers rather than retail ones (Sohail&shanmugham, 2003). The security first network bank was the first Internet banking in the world that was built in 1995 in USA. After that some famous banks introduced their internet banking one after another, such as Citibank and bank of America.

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. 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).

Expanding its leadership, Dashen Bank has begun accepting MasterCard in addition to Visa cards. Dashen won the membership license from MasterCard in 2008. Furthermore, Dashen Bank signed an agreement with iVery, a South African E-payment technology company, for the introduction of mobile commerce in April 21, 2009, that harnessing its leadership with advanced banking technology. According to the agreement, iVery Payment Technologies has licensed its Gateway and MiCard E-payment processing solution to Dashen Bank. Dashen'sModbirr 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 (Amanyehun, 2011).

Although Dashen's new technology is one step ahead in that it allows transfer of funds from one's account to others, the first ever E-banking gateway was signed between Ethiopian

Commodity Exchange (ECX) and Dashen Bank and CBE. The E-banking system being developed with both banks is designed to give a secure electronic data sharing gateway between clients, banks and ECX, by facilitating a smooth transaction (Abiy, 2008). By the end of 2008 Wegagen Bank has signed an agreement with Technology Associates (TA), a Kenyan based information technology (IT) firm, for the development of the solutions for the payment system and installation of a network of ATMs on December 30, 2008,

Zemen Bank, the only Ethiopian bank anchored in the idea of single branch banking, by launching full-blown internet banking, a service which is new to Ethiopian banking industry in the year 2010. The bank tested the venture through its first phase of the online service, and now it is already started the full-fledged version, which enable customers to make online money transfer freely. Previously, the online banking service, delivered by the bank, only gave access to bank statements and exchange rate information. The new and never-been-tried service proposed by the bank is to include free account money transfer, corporate payroll uploading system where employers could upload payroll to the system and make payments to individual worker's accounts online and online utility bill settlement system, when utility companies are ready(Asrat, 2010).

The agreement signed by three private commercial banks to launch ATM and POS terminal network, in February 2009 is welcoming strategy to improve electronic card payment system in Ethiopia. Three private commercial banks - Awash International Bank S.C., Nib International Bank S.C. and United Bank S.C. have agreed in principle to establish an ATM network called Fettan ATM network. If everything goes as planned, Fettan ATM will install over 140 ATM machines and over 340 POSs across Ethiopia. There will be one ATM at every branch of the consortium banks, all domestic airports serviced by Commercial service, shopping complexes and merchants. The agreement is the first significant cooperation between competing banks in Ethiopia, which others should be encouraged to follow as there is no single bank in Ethiopia that can afford to provide Extensive geographical coverage and access (Binyam, 2009).

2.3 Challenges related to the adoption of E-banking

In spite of the fact that bankers and customers can get benefit from online banking, there are a lot of reasons which hinders the popularity of e-banking services. The majority of private banks are still lacking behind the online banking channel. Kuisma, Laukkanen&Hiltunen (2007); Littler &Melanthiou (2006); Natarajan, Balasubramanian&Manickavasagam (2010) as cited in Mohammad (September, 2012) stated that, customers still fear the risk of e-banking services although electronic banking introduces many benefits for banks and customers, They argue that, Some customers feel that electronic banking services could make them lose their money and hence, there are still a large group of customers who refuse to adopt such services.

According to Pikkarainen *et al.* (2004), banks are not using the online banking services due to:

1. For customers to use online banking services, internet connection is prerequisite.
2. The new users want to learn how to use these internet services before using these online banking services.
3. Some non-users complaint that there are no social dimensions while doing online banking which is quite different from face to face banking situation.
4. The security issue hinders some customers to use the online banking services.

Mattila (2003) noted that perceived difficulty in using computers combined with the lack of personal service in electronic banking were the main barriers while Sathye (1999) identified the security concerns and lack of awareness about Internet Banking as the main obstacles to non-adoption. He pointed that young, educated and wealthy groups of customers were the most relevant customer segments for the rapid development of Internet banking market.

Ethiopian banking industry faces numerous challenges to adopt E-banking system and grab the opportunities presented by ICT applications in general. According to Gardachew (2010), the main challenges for E-banking applications I Ethiopia are:

Low level of telecommunication infrastructure for internet: The development and improvements of e-commerce in Ethiopia have been impeded by lack of infrastructure for telecommunications, internet and online payments. Therefore, due to unavailability of internet facilities, most rural areas of the country where the majority of small and medium businesses concentrated are unable to engage in e-commerce activities.

Unavailability of suitable legal and regulatory framework for e-commerce: Electronic contracts and signatures are not accommodated by Ethiopian current laws. Ethiopia has not yet enacted legislation that deals with e-commerce concerns including enforceability of the validity of electronic contracts, digital signatures and intellectual copyright and restrict the use of encryption technologies.

High rates of illiteracy: Low literacy rate is a serious impediment for the adoption of E-Banking in Ethiopia as it hinders the accessibility of banking services. For citizens to fully enjoy the benefits of E-Banking, they should not only know how to read and write but also possess basic ICT literacy.

High cost of Internet: The cost of Internet access relative to per capita income is a critical factor. Compared to the developed countries, there are higher costs of entry into the e-commerce market in Ethiopia. These include high start-up investment costs, high costs of computers and telecommunication and licensing requirements.

Frequent power interruption: Lack of reliable power supply is a key challenge for smoothly running E-banking in Ethiopia.

2.4 Factors influencing Customers to adopt E-banking system

Many researchers have been used different frame works in the study of adopting new technological innovation. Among frameworks that have been developed based on the past studies includes, the Technology-organization-Environment framework (TOE) (Tornatzky& Fleischer 1990),which identifies three basic Factors for the adoption of technological innovation, i.e., technological factors, organizational and environmental factors. Technology Acceptance Model(TAM) (Davis, 1989), which posit the two sets of beliefs, i.e., perceived ease of use (PEOU) and perceived usefulness (PU) to determine individual's acceptance of a technology. PEOU refers to the degree to which an individual believes that using a particular system would be free of physical and mental effort, PU on the other hand is related to users' perception of the degree to which using a system will be beneficial (Alsabbagh&Molla, 2004).

2.4.1 Technology-Organization-Environment (TOE) Framework

TOE framework was proposed by Tornatzky and Fleischer; it is designed for studying the likelihood of adoption success of technology innovations. This framework is a comprehensive

and well received framework in the context of innovation adoption by organizations and has been used in many studies (Salwaniet al., 2009; Ellis, 2009; Chang et al,2007; and Zhu & Kraemer, 2006). According to Tornatzky& Fleischer (1990), technology adoption within an organization is influenced by factors pertaining to the technological context, the organizational context, and the external environment. The technological factor refers to adopter's perception of E-banking attributes. Typical characteristics of technology considered in technology adoption studies are based on the assumption of Roger's diffusion of innovation (Rogers, 2003), which include relative advantages (perceived benefits), and relative disadvantages (perceived risks). While the organizational factor refers to the organization's characteristics that influence its ability to adopt and use of E-banking system, the environmental factor refers to the external environment in which an organization operates and its condition for supporting the development of E-banking services.

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, 2009; 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.

Organizational Factors

Organizations are different in their preference to adopt technological innovation (Iacovou, 1995; and 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 resources are an important factor in facilitating innovation adoption for any organization and they are often correlated with the firm size (Kuan, 2001; and Iacovou, 1995).Therefore, it is expected that the availability of financial resources within the adopting firms is important for E-banking adoption. 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.

Environmental factors

The four factors relevant for E-banking adoptions are:

Legal Frameworks: The existence and maturity of E-commerce legal frameworks within a country influence the diffusion of online transactions including E-banking as demonstrated in various studies (Tan & Wu, 2002; Martinson &Trappey, 2001).

The National ICT infrastructure: National ICT infrastructure is a major factor that supports the adoption 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 adoption and use cannot do well (Efendioghu, 2004; and Scupola, 2003).

Competitive pressure: Competitive pressure can strongly influence any bank to develop and adopt E-banking initiatives and it may affect the bank's perception towards E-banking system. As implied in previous studies (Quaddus&Hofmeyer, 2007; Gibbs, Kraemer &Dedrick, 2003).

Government Support:-Government can either directly or indirectly affect the adoption of E-banking in terms of creating a favourable environment and impetus for banking institutions and their customers so that the services can be diffused with the community (Kuan, 2001; and Iacovou, 1995)

2.4.2 Technology Acceptance model (TAM)

To understand, predict and explain why people accept or reject information systems; researchers have developed and used various models to understand the acceptance of users of the information systems. The technology acceptance model (TAM) that was introduced by Davis, Bagozzi, &Warshaw (1989) is one of the most cited models that researchers used to study underlying factors that motivate users to accept and adopt a new information system (Al Shibly, 2011). The primary goal of TAM is to provide an explanation of factors affecting computer applications' acceptance in general. In addition, this model helps researchers and practitioners to identify why a particular system is unacceptable (Davis, 1989). Davis suggested that using an information system is directly determined by the behavioral intention to use it, which is in turn

influenced by the users' attitudes toward using the system and the perceived usefulness of the system. Attitude and perceived usefulness are also affected by the perceived ease of use.

The technology acceptance model (TAM) (Davis, 1989) has received significant attention in IS acceptance literature. According to TAM, system usage behavior is determined by the intention to use a particular system, which consecutively, is determined by the perceived usefulness and perceived ease of use of the system. While the TAM has much strength, including its specific focus on IS use, its basis in social psychology theory, the validity and reliability of its instruments and its parsimony. The TAM posits that a user's adoption of a new information system is determined by that user's intention to use the system, which in turn is determined by the user's belief about the system. The TAM further suggests that two beliefs which are perceived usefulness and perceived ease of use are instrumental in explaining the variance in users' intentions. Many researchers have introduced additional variables to TAM and suggested that these external variables may be added as a way of improving the model's predictive power (Davis, 1989). According to the model, in explaining the adoption of any information system, perceived ease of use (PEOU) and perceived usefulness (PU) are the two most important determinants.

2.4.3 The theory of reasoned action

According to Illuminatus (2014), Fishbein and Ajzen developed the Theory of Reasoned Action in 1975. They later defined it with empirical evidence to support its validity and reliability. They postulated that: an individual's behavioral intention is the immediate determinant of behavior their attitude and subjective norm are mediated through behavioral intention and their behavioral and normative beliefs are mediated through attitude and subjective norm. Also it can be described as one of the most influential theory to explain human behavior's attitude toward adoption of innovation.

2.5 Empirical studies related with E-banking adoption

Some related studies are conducted by different researchers in different parts of the world. However, there are limited numbers of studies conducted in Ethiopia on the adoption of technological innovation. Specifically, Gardachew (2010) conducted research on the opportunities and challenges of E-banking in Ethiopia. The aim of his study was focused on analyzing the status of electronic banking in Ethiopia and investigates the main challenges and opportunities of implementing E-banking system. The author conducted a survey on the existing operating style of banks and identifies some challenges of using E-banking system, such as, lack of suitable legal and regulatory frame works for E-commerce and E- payments, political instability in neighboring countries, high rates of illiteracy and absence of financial networks that links different banks. According to Gardachew (2010), Opportunities offered by ICT through e-learning programs and Commitment of the governments on development of ICT infrastructures is considered as drivers of using E-commerce and E-payment systems.

Wondwossen&Tsegai (2005) also studied on the challenges and opportunities of E-payments in Ethiopia; their objective was studying of E-payment practices in developing countries, Africa and Ethiopia. The authors employs interview and on site observation to investigate challenges to E-payment in Ethiopia and found that, the main obstacles to the development of E-payments are, lack of customers trust in the initiatives, Unavailability of payment laws and regulations particularly for E-payment, Lack of skilled manpower and Frequent power disruption. According to Wondwossen&Tsegai (2005), an adequate legal structure and security framework could foster the use of E-payments, which is contradicting with the finding of the previous study.

On the other hand the study conducted by Daghfous&Toufaily (2007) on the success and critical factors in adoption of E-banking by Lebanese banks. The research was conducted on the factors that can lead to success the adoption of E-banking and the other factors that can constitute as barrier to its adoption, it focus on the organizational, structural and strategic factors which can accelerate or, on the contrary, slow the adoption of this electronic mode of distribution and communication by the banks, through analyzing the case of the Lebanese market. In order to test the validity of the theoretical framework, structured survey was used, interview questionnaire that was given to E-banking managers or to information technology managers of all the banks on the official list of institutions operating on the Lebanese market, with a total of 57 banks, 31 of

them operate internationally and 26 are strictly local were used to gather data. The results of their study shows that the organizational variables (bank size, functional divisions, technical staff, technical infrastructure, perceived risks, decision makers` international experience and mastery of innovation) are variables which exert significant impact on the adoption of E-banking, among the structural characteristics, the result revealed that internal technological environment of the bank is a very important factor in determining the adoption of E-banking, also the result shows that banks which are developing in the international scale are more likely to adopt E-banking innovations. Finally the result of the study indicated that extent of penetration of E-banking in the growth phase of an emerging market has an important correlation with the improvement of commercial performance.

The other descriptive case study analysis conducted by Kalganet *al* (2006) on „Factors influencing the adoption of internet banking in Oman, aimed to identify the main potential factors or impediments that are currently inhibiting the incorporation or adoption of E-commerce applications in the Omani Banking sector. Data, used in their study were collected using semi structured interviews and survey questionnaire as well as reviewing some bank documents. The results of their study provide a Pragmatic picture about the adoption of E-Commerce applications in the core financial sector domain of Oman. One of the main findings is that security and data confidentiality issues have been a major barrier. The banking sector was reluctant to use E-commerce applications as they felt that transactions conducted electronically were open to hackers and viruses, which are beyond their control. Lack of top management support is the other inhibiting factor in the adoption of electronic commerce applications as per their finding. Similarly the study of Ghazi &Khalid (2012), found that, the most important barriers for E-business growth are technological issues, such as, security risk, quality of internet and cost of implementation to be the most prominent.

The study of Shah *et al.* (2005) on critical success factors (CSF) in E-Banking conducted in United Kingdom, aims to determine the critical issues related to financial sector organizations when they establish businesses online. The survey method was used by researchers which target the financial sector in the UK. The study indicates that Understanding the CSFs in E-banking is important for senior management of banking related organizations, because it would potentially help them improve their strategic planning process. The analysis of the study indicates two major types of statistical analyses were conducted, descriptive statistical analyses and factor analysis.

In descriptive analyses, the factors (or variables) were ranked in order of their mean score, the highest score being the most important and so on. The top six factors in order of importance were: user-friendly website, systems security, support from top management, fast responsive customer service, promotion of electronic commerce within organization, and all time availability of services and rapid delivery of services.

Factor analysis, which was done to group together, related variables to uncover factors (in terms of factor analyses), found the following factors to be critical for the success in E-banking. Issues related to organizational flexibility and speed of services delivery were found to be at the top of the importance list. Issues related to organizational flexibility and speed of services delivery were found to be at the top of the importance list. Business processes and systems integration and enhanced customer services were next in the list of importance.

Polatoglu&Ekin (2001) conducted a research on an empirical investigation of Turkish consumer acceptance of internet banking and mention reliability as the prime factor in their finding for the adoption of new technological innovations, reliability consists of security and privacy in Internet Banking transactions. They go on to state that risks (security concern) include financial, physical or social risks associated when trying an innovation. They say that security risk is known to be as one of the major barriers in online banking adoption.

Zhao *et al.* (2010) in their study of “adoption of internet banking service in china” says trust in a bank is the fundamental because it deals with customers financial activities. Trust is not only important to reduce risk in Internet Banking in general but also it helps banks to build trust to be more competitive in the industry Gerard *et al.* (2006) in their study in Singapore identify risk to be an important factor for Internet Banking adoption. All respondents who did not use Internet Banking services had a negative perception of the security in Internet Banking. The respondents perceived that there were many security risks when using the internet. They felt the privacy was a concern, feeling all their financial information could be in jeopardy. Risk was one of the two most frequently mentioned factors in their study, “Concern about risk was mentioned by all respondents. An empirical investigation conducted by Sathye (1999) on the adoption of Internet Banking by Australian consumers also identified, security concerns as key factor in internet banking adoption. A report on Internet Banking in Australia finds that, security concerns among banks and customers are keeping both away from Internet Banking” Sathye (1999). According to

Sathye (1999) Security was identified as the biggest obstacle in adoption; it was found that 78 percent of personal and 73 percent of business respondents had security concerns when it comes to the use of Internet Banking. Thus, pointing out that personal users have more security concerns than business users. Sathye (1999) further state that, a survey conducted by Thorton consulting (1996) in USA concluded that 67 percent of banks in the USA felt that security is a key anxiety in Internet Banking adoption. Banks tend to promote their security features in their services using technical terminology. This makes it difficult for normal customers to comprehend and resulting to a squander in the whole promotion.

Similarly the study of Yang (1997), on the security of electronic banking aimed to identify the challenges that oppose electronic banking which are the concerns of security and privacy of information. The study suggests that solutions to the security issues require the use of software-based systems or hardware-based systems or a hybrid of the two. These software-based solutions involve the use of encryption algorithms, private and public keys, and digital signatures to form software packets known as Secure Electronic Transaction used by MasterCard and Pretty Good Privacy. Hardware-based solutions such as the Smartcard and the Me Chip provide better protection for the confidentiality of personal information. Software-based solutions have the advantage over hardware-based solutions in that they are easy to distribute and are generally less expensive. In Laukkanen (2008) research, risk is considered as the most intense barrier and the greatest concern in the adoption of Internet Banking. However, in this study consumers feel human errors by themselves could cause a threat to their financial services. For example, losing their Personal identification number (PIN) codes and it may get it to the wrong hands and result in crime or theft. “A higher determinant of resistance appears to be the risk related to the individual’s perceived ability to use the innovation successfully, i.e. self-efficacy” Laukkanen (2008). Sathye (1999) suggests that banks use positive publicity to its customers to help ease the response from customer on security. One of the major banks in Australia has taken responsibility in undertaking losses for any unauthorized use, with exception of certain circumstances. However, in an empirical investigation in Turkey by Polatoglu&Ekin (2001) states that Internet Banking services introduced by large, well-known and trusted banks, because customer perceived security risk in these banks is assumed to be decreasing significantly. On the other hand the risk factor is a barrier to corporate customers of banks as well. Balachandher *et al.* (2010) have completed a study on the barriers to internet usage on a corporate customer

perspective and found that lack of trust on security issue is the main barrier. The study shows that corporate customers only use Internet Banking to a certain extent and feel banks should invest more on security infrastructure and banks should be willing to take full responsibility. These results are similar to the findings of different studies. For example in the study of Booz *et al.* (1997), security concern was the top ranked factor for users not adopting Internet Banking in Latin America. Ram & Sheath (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 barrier, the value barrier and the risk barrier, whereas psychological barriers can be divided into tradition 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. On the other hand Khanfaret *al* (2006) conducted study on the customer satisfaction with internet banking web site in the Arab Bank. 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, transaction 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.

A research conducted by D'Souza (2002) on the comparative performance of public and private sector banks in the decade of the 1990s shows that though the turnover ratio rose in public sector banks (PSBs), the turnover per employee in private and foreign banks doubled relative to the ratio for PSBs. Also, this is not due to the presence of a large rural and semi-urban concentration of bank branches amongst PSBs but rather due to technological up gradation in the private and foreign banks. Private and foreign banks have changed the structure of their employment towards a higher skilled workforce by increasing the recruitment of officers and reducing clerical and subordinate staff. The combination of higher technology and higher skills have posted a higher turnover for these banks as they have been able to provide better customer support and have managed their assets well.

The study of Aghdassiet *al* (2007) on Association between strategic values and E-banking adoption in Iranian banks" attempts to understand strategic value of E-banking for Iranian banks

and examine the causal effect of perceiving E-banking as a value and its adoption. The researchers propose an E-banking adoption model that is identifying five factors that have been found to be influential in the perception of strategic value of IT: performance support, operational support, managerial productivity, and strategic decision aids. They also identified eight factors that influence electronic banking adoption: organizational readiness, Infrastructural readiness, external dependency, Intangible pressure, persuasive pressure, perceived ease of use, and perceived usefulness. Data are collected via a questionnaire-based survey from Decision maker unit of Iranian Banks. In order to test the model, a statistical analysis was conducted in two stages. The first step employed factor analysis to measure whether the number of factors and loadings of items involved in the two main constructs (perceived strategic value and adoption) conform to the proposed model, canonical analysis was utilized in the second step in order to explore how the perceptions of strategic value influence the decision to adopt E-commerce. The finding of their study indicated, that in a developing country like Iran and a big industry like banking, although the items of the adoption factors model are applied, the story is a bit different. In Iran the E-commerce adoption specifically E-banking adoption is in its beginning stages and still there are lots of gaps. These gaps could be technological, economical, socio-cultural, geopolitical and other gaps. Also the result of their study expressed, that bank managers' perception through E-commerce is very positive and effective in their adoption trend.

The other study reviewed was the study of Kassim (2005) focused on E-banking service quality: a gap in the Qatari banking industry investigates the discrepancy between customer's expectation and perception towards the E-banking services in Qatar. A questionnaire was distributed to 100 retail-banking customers in Doha. Out of a total of 100 questionnaires, only 62 were useable. A cross-sectional survey design was adopted which questioned respondents on E-banking services. The findings of the study showed that there were some differences in magnitude of gap score among the five items of the E-banking services: Internet/Telephone/SMS, personnel assistance, instructions, ATM machines and functionality of the ATM machines. The result also showed that one item of E-banking services had positive gap score, that is, the quality of the Internet/Telephone/SMS banking services. All the other four items indicated that the quality of service fell short of the customer's expectation; customers were generally not satisfied with the service providers. Nevertheless, each item of quality of the E-banking services showed differences with respect to the size and gap score.

On the other hand the study of Leelapongprasutet *al* (2005) on a Quality Study of Internet Banking in Thailand aimed to study a level of Internet Banking services quality in Thailand and compare the overall services quality of Internet Banking and factor of Internet Banking service between each bank and each dimension of quality by David A. Garvin. The research tools used in this study were questionnaires in the Web page form.

Questionnaires are adopted from the tools that are used to evaluate the service quality called „The dimension of quality by David A. Garvin“ by evaluating the quality of eight dimensional services: Performance, Features, Reliability, Conformance, and Durability, Aesthetics, Serviceability and Perceived quality. The result of the study reveals that, the quality level of internet banking service of commercial banks in Thailand in the perspective of performance was different in each bank and by weighting the importance of criteria used to evaluate the Internet Banking service quality in Thailand, the most important was the dimension of reliability, serviceability and durability. The less important was in dimension of perceived quality.

The study of Kerem (2003) on the adoption of electronic banking: underlying consumer behavior and critical success factors conducted in Estonia, was intended to study the further understanding of, how consumers perceive electronic banking in the heyday of interactive channels in Estonia, as Estonia is internationally renowned for being a pioneer in the acceptance of new technologies. A series of an in depth interviews was conducted with leading industry experts in Estonia. The selection criterion for the respondent was mainly their involvement with the development of Internet banking systems from the early days of its emergence. The survey conducted for this research addressed six different issues influencing the adoption of Internet banking (Better prices, Recommendations, Better service, Marketing efforts, Better access and higher privacy). The most important factors in starting to use Internet banking are first and foremost better access to the services (convenience), better prices and higher privacy. Better service (i.e. preferring self-service over office service) was also of above the average importance. Two factors that the respondents did not consider relevant to their adoption decision were banks' marketing activities and personal recommendations from friends and colleagues. Also the survey conducted six main obstacles (computers are difficult, no access to internet, internet banking is expensive, low security, have had no chance to try and I prefer personal contact) in adopting Internet banking (results of a preliminary study, 100 respondents), the most important factors discouraging the use of Internet banking are lack of Internet access and not having a chance to try out Internet banking

in a safe environment. Finally the research indicates that banking activities alone may not be sufficient in achieving growth if general infrastructure, economic environment and government initiatives are not supportive. The research conducted on identifying the attitudinal, social and perceived behavioral control factors that might influence the adoption of Internet banking by Hoppe *et al.* (2001) were based on theory of planned behavior (TPB) and the diffusion of innovations theory (DIT) developed by a previous research in Singapore. The aim of the study was to collect South African data in order to test out the hypotheses regarding the factors, which affect adoption of Internet banking and compare these results with those collected in other countries. Online questionnaire was used to collect empirical data and the results of the study shows that intention to adopt Internet banking can be predicted by attitudinal factors, perceived behavioral control factors to a lesser degree, and not by subjective norms. All attitudinal factors except banking needs are found to be significant, with complexity and risk showing a negative relationship.

In general, Review of Empirical studies shows that understanding the critical success factors (CSFs) in E-banking is important for banking industries because it would potentially help them improve their strategic planning process. The main obstacles and barriers that oppose E-banking adoption 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 adoption of E-banking such as, perceived advantages and other factors related to the services itself & how to be accepted and used by the customers, which differ from country to country, reflecting the economic and technological development in each country. In this study researcher has identified the main barriers and drivers of adopting E-banking in Ethiopian banking industries by using survey and interview conducted with managers of the selected banks. The following section, thus, reviews literature related with barriers and benefits/drivers of adopting E-banking system.

2.6 Conceptual Framework

For examining influential factors of E-banking adoption by customers, the dominant models like TRA, TPB and TAM were studied and compared by different researchers. For example, as cited in Pooja, Normalini&Ramayah (2014), in UK, Yousafzai& colleagues conclude that the TAM model is superior to the other models in predicting actual adoption based on empirical data. Perceived usefulness and perceived ease of use are the primary means to adopt technology like e-banking in the TAM model. However, the findings of Pooja, Normalini&Ramayah (2014) highlight the importance of customers' attitude that positively influences E-banking adoption by customers. Therefore, they recommend that customer's attitude should be included in explaining factors affecting customers' e-banking adoption.

Furthermore, Consumer behavior studies define perceived risk (PR) in terms of the customer's perception of the uncertainty and potential adverse consequences of buying a product or services. The degrees of risk that customers perceive and their own tolerance of risk tacking are factors that influence their purchase decision (Nasri, 2011). A larger perception of risk will reduce the perceived benefit of the technology (Horst, Kuttschreuter&Gutteling, 2007). In developing countries like Ethiopia, the adequacy and quality of National ICT infrastructure is low. Therefore this has been seen as a major factor that supports the adoption of E-banking by customers. Without an adequate and quality of a nation's ICT infrastructure development, E-banking adoption cannot do well. Therefore Conceptual Framework of this study is presented as follows.

2.6.1 Definition of Variables

An important step in designing all quantitative research is defining or identifying the variables that were manipulated, measured, and described. A variable that is selected by the researcher to determine its relationships to the observed outcomes of the research known as Independent Variable (IV); The variable being measured as an outcome which depends up on other variable, namely outcome, response, explained variable are known as Dependent Variable (DV)(Kothari, 2004). This section presents some definition of Variables and hypotheses that have been developed for the study.

2.6.1.1 Dependent Variable

According to Neumann (2007), a variable that is the effect or is the result or outcome of other (Independent) are dependent variable. In this study the dependent variable is customers' adoption

of E-banking services. Adoption of 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). It also 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).

2.6.1.2 Independent Variables

In order to find out the driving force for customers’ adoption of E-banking services, measures of determinants are used in this research. These determinants are named independent variables (the cause variables) or the one that identifies forces or conditions that acts on something else (Neumann, 2007). This study has five independent variables that were considered as factors that force customers’ to adopt E-banking services by different researchers. These are perceived usefulness, perceived ease of use, perceived risks, attitude/behavioral intention and National ICT infrastructure

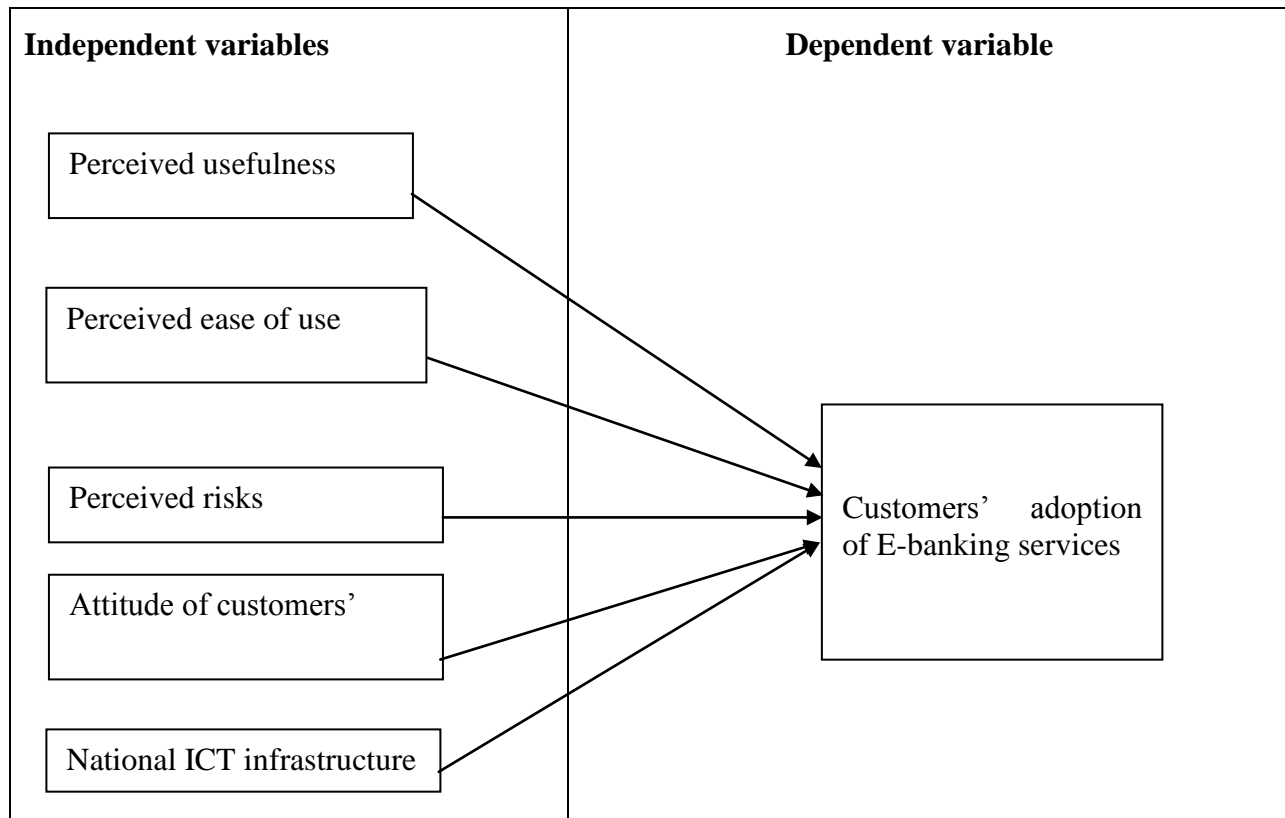


Figure 2: 1 Conceptual Framework of factors affecting customers’ adoption of E-banking services
Source: *Adopted from Illuminatus (2014).*

CHAPTER THREE

3. RESEARCHMETODOLOGY

INTRODUCTION

This chapter presents the detail methodology, showing the logical frame work like research approaches, research design, sample design, model specification and measurement, data types and sources, and method of data collection and analysis

3.1 Research approach

Researcher select research approach based on the research objective, the nature of the research, the problem area, and research questions (Alhamdani *et al*,2006). According to Creswell (2003), there are three basic types of research approaches, quantitative, qualitative, and mixed approach. To achieve the research objectives stated, the researcher used mixed approach (quantitative and qualitative) in collecting and analysing data. Kothari (2004) stated quantitative research is based on the measurement of quantity or amount. It is applicable to phenomena that can be expressed in terms of quantity. Qualitative research, on the other hand, is concerned with qualitative phenomenon, i.e., phenomena relating to or involving quality or kind.

3.1.1 Mixed research approach

Mixed research approach or pragmatist world view is not committed to any one system of philosophy and reality. In this approach, inquirers draw liberally from both quantitative and qualitative assumptions.

In order to achieve the objective of this study and answer the research questions researcher adopts mixed research approach to examine the factors affecting the adopting E-banking in Commercial bank Ethiopia as a public organization to converge across quantitative and qualitative methods (triangulating data sources).

Employing this approach helps to neutralize or cancel the biases of applying any of a single approach and a means to offset the weaknesses inherent in a single method with the strengths of the other method (Creswell, 2003). Mixed research approach opens door to multiple methods of data collection and helps to generate the findings to a population and develop a detailed view of the meaning of a phenomenon or concept for individuals (Creswell, 2003). This research approach pose the researcher to the challenges that need for extensive data collection, the time-

intensive nature of analyzing both text and numeric data, and the requirement for the researcher to be familiar with both quantitative and qualitative forms of research (Creswell, 2003).

Therefore, the data collection involves gathering both numeric and text information. This approach was used because it is important to better understand the research problem by converging numeric trends from quantitative data and specific details from qualitative data.

3.2 Research Design

Designing a research is making a road map to a study which leads all functions and steps undertaken. Kothari (2004) defines research design as the conceptual structure with in which research is conducted; and it consists of the blue print for the collection, measurement and analysis of data. It is also a strategy of describing procedures about sample size, data sources, means of collection & methods of data processing, analyzing and presenting based on available time and resources.

The research is an explanatory type. Explanatory research seeks explanation of observed phenomena, problems, or behaviors. It seeks to answers why and how types of questions. It attempts “to connect the dots’ ‘in research, by identifying causal factors and outcomes of the target phenomenon (Bhattacharjee, 2012). This research also used cross-sectional survey as strategies of inquiry. Cross-sectional survey strategies of inquiry is well suited to an explanatory type research because it can be used for examining associations, although the choice of which variables to label as predictors and which as outcomes depends on the cause and effect hypotheses of the investigator rather than on the study design..

The most important condition for differentiating among the various research strategies is to identify the type of research question being asked (Creswell, 2003; Hair *et al.* 2006; Leedy, 1989; McNabb, 2004; and Yin, 1989). It is possible to identify some situations in which all research strategies might be relevant and other situations in which two strategies might be considered equally attractive. According to Yin (1994), there are five strategies to collect data and get results: experiment, survey, archival analysis, history and case study. In addition, there are three criteria to determine the research strategy: types of research questions, control over behavioral events, and focus on present events.

In this study, Survey approach has been chosen, because the research questions are focused on: To what extent perceived usefulness, perceived ease of use, perceived risk, attitude in using E-banking services, and availability of National ICT infrastructure affect e-banking adoption effectiveness of in CBE.

3.3 Sample Design

3.3.1 Population or Universe

The population/universe that this research addressed had been all the customers of CBE fond in Butajira, Eresha and Erinzf branch. The total number of the customers of the institution, as shown by table 3.1, is 43,300.

Table 3.1: Population size

Roll No	Branch	Number of customers		
		Total customers	E-banking users	None users of E-banking
1	Butajira	26000	9460	16540
2	Eresha	13500	4250	9250
3	Erinzf	3800	1140	2660
	Total	43,300	14,850	28,450

Source: 2010 E.C human resource management annual report of the three branches.

3.3.2 Target population

Kothari (1990) stated that if the total area of interest happens to be a big one, a convenient way in which a sample can be taken is to divide the area into a number of smaller non-overlapping areas and then to randomly select a number of these smaller areas (usually called clusters), with the ultimate sample consisting of all (or samples of) units in these small areas or clusters.

Having this in to consideration and to manage the research, using cluster sampling technique and by considering each branch as a cluster, the researcher selected two branches with a total target population of 29,800 (68.82%) among three branches by using simple random sampling technique.

Table 3.2: Target population size

Roll No	Branch	Number of customers		
		Total customers	E-banking users	None users of E-banking
1	Butajira	26000	9460	16540
2	Erinzf	3800	1140	2660
	Total	29,800	10,600	19,200

Source: 2010 E.C human resource management annual report of the three branches.

3.3.3 Sampling technique and sample Size

Sampling is the process of choosing, from a much large population, a group about which wish to make generalized statements so that the selected part represent the total group (Leedy, 1989). In addition to time, money and data constraints that had played an important role in selecting of the sample size, it is very important to determine a sample size by considering the practical situation.

According to John Curry cited in Yount (2006), with the “rule of thumb” on sample size, if the size of population is 01-100, the sample is 100%; if the size of population is 101-1,000, the sample is 10%; if the size of population is 1,001-5,000, the sample is 5%; if the size of population is 5,001-10,000, the sample is 3%; and if the size of population is 10,000+, the sample is 1%. Having this in to considerations and since the population size of this study is in the last range (10,000+), a 1% sampling were used to calculate the sample size.

Therefore, the sample size of the study is 1% of 29800, i.e. 298:

As shown in table 3.3, the sample size is distributed to the two branches and two classes of customers’ proportion to the total number of customers’. The users of e-banking services sample respondents’ were selected purposively from the selected branches at the time of using e-banking services and the non-users of e-banking services sample respondents’ were selected purposively from the selected branches at the time of using the traditional banking services. Besides the questionnaire distributed and collected from the purposely-sampled branch customers and the interview conducted with the bank managers were self-administered.

Table 3.3: Sample size determination

Roll No	Branch	Number of customers			Sample size rate	Number of customers		
		Total customers	E-banking users	None users of E-banking		Sample size of E-banking users	Sample size of None users of E-banking	Total Sample size
1	Butajira	26000	9460	16540	1%	95	165	260
2	Erinzf	3800	1140	2660		11	27	38
	Total	29800	10600	19200		106	192	298

Source: 2010 E.C human resource management annual report of the three branches

3.4 Data Types, Sources and Method of Collection

3.4.1 Data Types

To make the study more comprehensive, the researcher used both primary and secondary sources of data.

3.4.2 Sources of Data

Primary data Source

Primary data is the first hand information obtained from primary sources. Therefore, the primary data sources for the questionnaire and interviews are the customers of the two branches and nine managers (the district manager, the two branch managers, the two branch business managers, the two branch quality assurance managers and the two branch operation and managers).

Secondary Data Source

Secondary data sources are those informations which have already been collected and processed by someone else. Therefore, for this study the secondary data sources are different published and unpublished documents such as; annual reports, annual audit reports and other relevant materials related to this study have been used.

3.4.3 Method of Data Collection

In order to collect sufficient data that can answer the research questions, researcher designed two surveys; the first was a questionnaire to get quantified results. The second survey was interviews aimed to collect data from managers of CBE at different levels from the selected branches. In

addition to questionnaire and interview, data were collected from different published and unpublished materials.

Questionnaire

The questionnaire were used to gather information about opinions of the two CBE branch customers on perceived usefulness in using E-banking services, perceived ease of use in using E-banking services, perceived risk of using E-banking services, attitude in using E-banking services, National ICT infrastructure in using E-banking services and its effect on effectiveness of using E-banking services. The questionnaire was prepared with closed-ended questions for the collection of quantitative data and the questions presented were in the form of affirmative statements, relating to the concepts of factors affecting the effectiveness of E-banking service.

Semi-structured interviews

The semi-structured interviews conducted to enhance and supplement the results of questionnaires. In addition, the semi-structured interview questions that were used for this study is to explore the data that is unclear for the researcher and the information that have not been collected through questionnaire by allowing the interview to remain flexible. The interviews were used to capture the perspectives of the manager of the two CBE branch at different levels about the effectiveness of adopting E-banking services.

Document review

The most important use of this information is to corroborate and augment evidence from other sources (Yin, 1989). Thus, the document examination helps to corroborate the patterns that evolved from the data collected via questionnaires and interview, so that the validity of the findings could be enhanced.

3.4.4 Model Specification

3.4.5 Model Specification

The formula used for the model is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \dots + \beta_N X_N + \epsilon \text{ (Econometrics, Gujarati)}$$

$$EUES = \beta_0 + \beta_1 (PU) + \beta_2 (PEU) + \beta_3 (PR) + \beta_4 (AE) + \beta_5 (NICTI) + \epsilon$$

Where:

EUES = Effectiveness of using E-banking services

PU: Perceived usefulness

PEU: Perceived Ease of Use

PR: Perceived risk

LF: Attitude to E-Banking

NICTI: National ICT infrastructure

Where **Y** stands for the mean values of using E-banking services, whereas, β_0 , X_1 , X_2 , X_3 , X_4 , X_5 and ϵ denote the intercept of the equation, mean values of perceived usefulness, mean values of perceived ease of use, mean values of perceived risk, mean values of attitude to E-Banking, mean values of National ICT infrastructure and error term of the equation respectively. In addition, β_1 , β_2 , β_3 , β_4 and β_5 are the parameters of the equation.

To guess the value of 'ε' there are assumptions about 'ε' which is divided in to three, based on the classical Linear Regressions Model Assumption (Brooks, 2008).

- The random variable (ε) is independent of the explanatory variables. This means there is no correlation between the random variable and the explanatory variable.
- No autocorrelation between the errors. This means the value which the random term assumed in one period does not depend on the value which it assumed in any other period.
- No 'perfect multicollinearity' between independent variables. That is, no explanatory variable can be written as a linear function of other explanatory variables.

Perceived Usefulness

Perceived Usefulness refers to the degree to which an organization that using a particular system would enhance or improve its job performance. According to Masrom & Hussein (2008) the adoption of whether to use an information system for a particular individual is very much dependent on the perceived usefulness and perceived ease of use of the information system.

As suggested by both TAM and TAM2, PU is a direct determinant of intention (Davis, 1989; Davis & Venkatesh, 1996; Igarria et al., 2000; Wang et al., 2003; Ramayah et al. 2002, Ramayah et al., 2003; Pikkarainen et al., 2004). The ultimate reason people exploit on-line banking systems is that they find the system to be useful in their banking transactions.

Perceived ease of use

Perceived ease of use refers to the degree to which a person that using a particular system would be free from effort (Davis 1986). Extensive research over the past decade provides evidence of the significant effect of PEOU on usage intention, either directly or indirectly through its effect on PU (Davis, 1989; Davis & Venkatesh, 1996; Igarria et al., 2000; Wang et al., 2003; Ramayah et al. 2002, Ramayah et al., 2003; Pikkarainen et al., 2004). On-line banking systems need to be both easy to learn and easy to use so that individuals will feel less threatened (Wang et al., 2003). This implies that PEOU is expected to have a positive influence on users' interaction with the on-line banking.

Perceived risks

One of the important risks faced by banking institutions in offering E-banking services is the customers' resistance to use the services which significantly hinder the growth of E-banking (Zhao et al. 2008; and 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 and Rogers, 2003). Therefore, the perception of the risks regarding E-banking is expected to influence its adoption and further growth.

Attitude of customers/behavioral intention

Attitude/behavioral intention measure a person's relative strength of intention to perform a behavior. If a person intends to do a behavior then it is likely that the person will do it. This implies that BI is expected to have a positive influence on users' interaction with the on-line banking (Pooja, Normalini&Ramayah, 2014). Ajzen (1991, 2002) define behavioral intention as "the degree to which a person has formulated conscious plans to perform or not to perform some specified future behavior". Intention is determined by a person's favorable or unfavorable attitude toward the use of that technology and his or her perception concerning its usefulness. The higher the level of intention, the higher the likelihood that such a behavior will be performed. In relation to e-banking, based on empirically data, scholars note that individuals with higher intentions to adopt e-banking are more likely to actually use e-banking services. The theory of planned behavior (TPB) suggested that human behavior is determined by intention to perform the behavior, which is affected jointly by attitude toward behavior Attitude (ATT) is the general feeling of people about the desirability or undesirability of a specific behavior (Ajzen, 1991, 2002).

The National ICT infrastructure

National ICT infrastructure is a major factor that supports the adoption 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 adoption and use cannot do well (Efendioghu, 2004; and Scupola, 2003).

3.5 Measurement

In connection with measurement of the instrument there are many different types of validity and reliability. Threats to validity and reliability can never be erased completely; rather the effects of these threats can be weakened by giving attention to validity and reliability throughout a piece of research (Cohen & Teal, 2007).

Reliability Test

Cohen & Teal (2007) Stated that Reliability in quantitative research is essentially a synonym for dependability, consistency and reliability over time, over instruments and over groups of respondents. In this form reliability is a measure of consistency over time and over similar samples. A reliable instrument for a piece of research will yield similar data from similar respondents over time.

The advantage of doing a pilot study include; it helps to detect potential defects in the measurement procedures, it assists in identifying ambiguous items, and it allows the researcher to become aware of nonverbal behavior that may occur due to the error wording questions. Therefore, the researcher conducted a pilot reliability test to confirm whether the customized instruments understood or not by respondents before the questioners were distributed.

To measure the reliability of the questioner, the researcher applied a preliminary reliability test by taking 25 respondents. According to (Kerlinger& Lee, 2000), a minimum acceptable level of coefficient alpha is 0.7.

Table 3.4 pilot test instruments

Variables	No. of respondents	No. of items	Cronbach's alpha
Perceived usefulness	25	5	.849
Perceived ease of use	25	4	.774
Perceived risk	25	6	.895
Customers attitude	25	3	.772
National ICT infrastructure	25	4	.836
Customers adopting of E-banking	25	6	.850

Source: SPSS out puts of pilot test, 2018

From table 3.4, the pilot reliability test seen that, the overall cronbach's alpha value of the dependent and independent variables of the study achieve the average requirement of reliability analysis. Therefore, the researcher can assume that the pilot test of the instrument was reliable for data analysis.

Validity Test

We might ask the question: are we measuring what we want to measure? To tackle this problem researcher uses validity test. Validity is the extent to which data accurately reflects what they meant to reflect. Some factors can affect the validity of data, such as a respondent is in a speed to complete the questionnaire and misinterpretation of questions by the respondents will affect validity (Ayele, 2013).

The researcher tasted the validity using an expert panel discussion with managers at different levels to get some comment on the instrument and make some rearrangement in some questions.

3.6 Method of Data Analysis

Data analysis consists of examining, categorizing, tabulating, or otherwise recombining the evidence, to address the initial proposition of a study (Yin, 1989). In order to investigate factors affecting effectiveness of adopting E-banking services; the results obtained from the above mentioned data gathering instruments were separately presented and jointly analyzed to address the various research questions and to test the hypothesis. The collected data were edited, coded and checked to have the required quality, accuracy and completeness, and then analyzed using SPSS (statistical package for social science) software program which provides descriptive outputs. Correlation analysis was carried out to establish the strength of the relationship between variables. The researcher also used the multiple regression analysis to determine how the predictor variables explain the dependent variable. This is because there is more than one independent variable that affects the dependent variable.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This part of the research discusses about the findings based on the information gathered from the questionnaires, interviewees and secondary data by the researcher. The primary objective of this paper is to investigate factors affecting customers' e-banking adoption with CBE in Butajira and Erinzf branches.

The chapter includes background information on respondents and the main body of the study. i.e., matters related to the perceived level of CBE customers about E-banking usefulness, ease of use and risk; the attitude of customers about E-banking; the availability of national ICT infrastructure; and their effect on the role of e-banking adoption with in commercial bank of Ethiopia Butajira and Erinzf branches. The descriptive measures of each variable, the correlation analysis, regression assumption checks and regression analysis and testing of hypothesis are also presented in this chapter sections.

4.2 Response rate

In order to undertake this study, a total of 298 questionnaires were distributed to the bank customers and among the total questionnaires 255 (85.57%) were completed and returned. Moreover, all the five semi-structured interviews were conducted with the higher and middle level managers of the two branches. Both the survey questionnaires and the interviews are attached at the end of this paper as Appendices. Therefore, the collected data is representative of the sample and can be used to make conclusions. Based on the data obtained from the respondents, the following analyses and interpretations have been made.

4.3 Characteristics of Respondents

This section provides a general background about the respondents who participated in answering the questionnaires of the study. During data collection the basic characteristics like sex, age, educational background, occupation, monthly income and length of time as customer in using e-banking services were collected.

Table 4.1: Demographic statistics of respondents'

Demographic	Alternative responses	Frequency	Percent	Cumulative Percent
Gender	Male	147	57.6	57.6
	Female	108	42.4	100.0
	Total	255	100.0	
Age	Below 20 years	9	3.5	3.5
	20-30 years	39	15.3	18.8
	31-40 years	132	51.8	70.6
	41-50 years	58	22.7	93.3
	Above 50 years	17	6.7	100.0
	Total	255	100.0	
Educational level	Below grade 12 (10)	91	35.7	35.7
	grade 12 (10) complete	76	29.8	65.5
	Diploma/TVET Certificate	54	21.2	86.7
	Bachelor Degree	23	9.0	95.7
	Master's Degree and above	11	4.3	100.0
	Total	255	100.0	
Occupation	Civil servant	95	37.3	37.3
	Own Business	35	13.7	51.0
	Employee in private sector	75	29.4	80.4
	Student	29	11.4	91.8
	Other	21	8.2	100.0
	Total	255	100.0	
monthly income	up to 3200	67	26.3	26.3
	3201-5250	82	32.2	58.4
	5251-7800	63	24.7	83.1
	7801-10900	32	12.5	95.7
	above 10900	11	4.3	100.0
	Total	255	100.0	
Length of E-banking services used	Below 1 year	13	5.1	5.1
	1-3 years	53	20.8	25.9
	3-5 years	22	8.6	34.5
	Above 5 years	6	2.4	36.9
	Not used at all	161	63.1	100.0
	Total	255	100.0	

Source: SPSS output of Field survey (2018).

As depicted by fig.4.1, the data were gathered and presented to assess whether both sex customers reusing/adopting e-banking services and products of CBE in Butajira and Erinzf branches, the result shows that majority of the bank customers 147 (57.6%) are males and 108 (42.4%) of the bank customer are females. This implies the bank technology service and products go mostly to male customers and the female customers in using/adopting e-banking services and products are not well enhanced.

According to table 4.1, regarding age of respondents, out of the total respondents, the majority 51.8% are 31-40 years which is followed by those who are 41-50 years 22.7%. Whereas, 15.3% of them are 20-30 years and 6.7% are above 50 years while the remaining 3.5% are below 20 years. This implies most of the bank's customers are not above 30 years old.

According to table 4.1, regarding educational level of respondents, out of the total respondents, the majority 35.7% are below grade 12(10) which is followed by those who are only grade 12(10) completed 29.8%. Whereas, 21.2% of them are Diploma/TVET Certificate holder's and 9.0% are bachelor Degree holders while the remaining 4.3% are Master's Degree and above. This implies most of the bank's customers are not well educated.

Regarding occupation, table 4.1 revealed that more than half of the respondents 37.3% are civil servants who is followed by employees in private sector 29.4%. The remaining are business owners, students, and others (such as retired employees, work requestors, and so on) with a percentage share of 13.7%, 11.4% and 8.2% respectively. From this analysis, it can be understood that CBE of Butajira and Erinzf branches serve mostly civil servants and private employees.

Regarding the level of income, the majority of respondents ranges from birr 3,201 to 5,250 (32.2%) which is followed with monthly income up to 3200 (26.3%). Whereas, (24.7%) of them are monthly income between birr 5,251-7800 and 12.5% of them are monthly income between birr 7,801-10,900 while the remaining 4.3% are monthly income above 10,900 (table 4.3). The implications is that most of the customers of the bank earn middle level monthly income.

Regarding the respondents' length of period as e-banking customers, data were collected and presented as depicted by table 4.1, 20.8% are customers of CBE that are using e-banking services for 1-3 years and 8.6% are customers of CBE that are using e-banking services for 3-5 years. The

remaining 5.1% and 2.4% are e-banking customers that were using the services for less than 1 year, and above 5 years respectively. Finally, 63.1% are customers of CBE that were never used e-banking services. From this, it can be understood that most of the customers of the bank are non-users and those who adopted e-banking services for less than 3 years.

Types of e-banking services respondents used

Regarding the types of e-banking services that the bank customers used, data were collected and the result is presented and analyzed as follows.

Table 4.2: Types of e-banking services used by respondents'

Types of services	Frequency	Percent
ATM	39	15.3
internet banking	3	1.2
mobile banking	4	1.6
POS	1	.4
Two types of e-banking service users	21	8.3
Three types of e-banking service users	21	8.3
Four types of e-banking service users	5	2.0
None users	161	63.1
Total	255	100.0

Source: SPSS output of Field survey (2018).

Table 4.2 presented the results about types of e-banking services that customers of CBE are using, 15.3% are only ATM users, 1.2% are only internet banking users, 1.6% are only mobile banking users and 0.4% are only POS machine users. In addition the result also showed that 3.5% are ATM and mobile banking users. 8.3% are two types of e-banking services users, 8.3% are three types of e-banking services users, 2% are the four types of e-banking services users and 63.1% are non-users of types of e-banking services. From this, it can be understood that most of the customers of the bank are non-users and those who adopted e-banking services use ATM only.

Secondary data analysis

Number of e-banking users in Butajira area

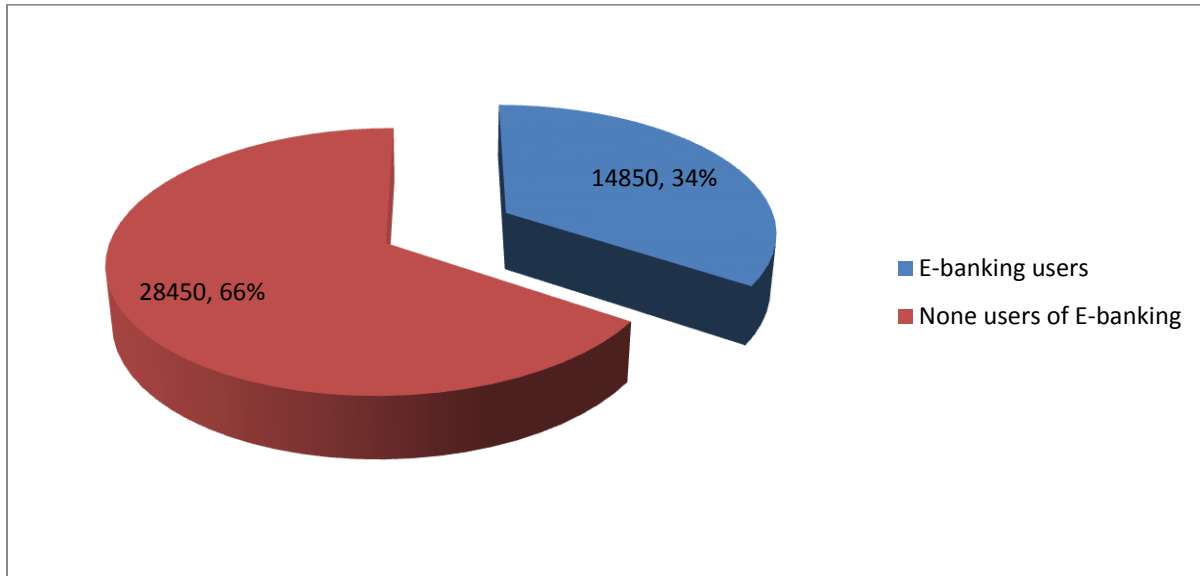


Figure 4.1: Number of e-banking users in

Source: Excel analysis result

As depicted in figure 4.1, the total customers of the three CBE branch in Butajira area are 43,300. However, the secondary data collected from these area CBE branch shows that, from the 43,300 total customers, only 14,850 (34%) of the bank customers were adopted e-banking services and products. This shows that the three CBE branch in Butajira area have low (below 50%) number of e-banking users.

Number of e-banking users in each branch

Regarding the total number of e-banking services users in each branch, the secondary data collected from these area branches and the result is presented and analyzed as follows.

Table 4.3: Number of e-banking users in each branch

No	Branch Name	Total customers	E-banking users in		None users of E-banking in	
			No.	%	No.	%
1	Butajira	26000	9460	36.38	16540	63.62
2	Eresha	13500	4250	31.48	9250	68.52
3	Erinzf	3800	1140	30.00	2660	70.00

Source: Excel analysis result

Table 4.3 presented the results about number of e-banking users in each branch shows that, in Butajira branch, from the 26,000 total customers, 9460 (63.62%) are e-banking services users; in Eresha branch from the 13,500 total customers, 4,250 (31.48%) are e-banking services users; and in Erinzf branch from the 3,800 total customers, 1140 (30.00%) are e-banking services users. This shows that adoption of e-banking services and products by their customers in Butajira area branches are almost equal their total customers.

Coverage of each branch in e-banking users in Butajira area

Regarding the Coverage of each branch in e-banking services users in Butajira area, the secondary data collected from these area CBE branch and the result is presented and analyzed as follows.

Table 4.4: Coverage of each branch e-banking users in Butajira area

No	Branch Name	Total E-banking users in Butajira area	E-banking users in each branch in	
			No.	%
1	Butajira	14850	9460	63.70
2	Eresha		4250	28.62
3	Erinzf		1140	7.68

Source: Excel analysis result

Table 4.4 presented the results about the coverage of each branch in e-banking services shows that, from the 14,850 total e-banking services users in Butajira area, Butajira branch covers 9460 (63.70%), Eresha branch covers 4250 (28.62%) and Erinzf branch covers only 1140 (7.68%) of the bank customers that have been adopted e-banking services and products. This shows that adoption of e-banking services and products in Butajira branch cover more than half of the total e-banking users in the area while adoption of e-banking services and products by customers in the rest two branches is low.

Length of E-banking services used by customers in each branch

Regarding the customers' length of period as e-banking customers in each branch, secondary data collected have been presented and analyzed as follows.

Table 4.5: Length of E-banking services used by customers in each branch

	Alternative responses	Frequency	Percent
Length of E-banking services used	Butajira branch		
	Below 1 year	1230	13
	1-3 years	1703	18
	3-5 years	4635	49
	Above 5 years	1892	20
	Eresha branch		
	Below 1 year	1020	24
	1-3 years	2593	61
	3-5 years	637	15
	Above 5 years	0	0
	Erinzf branch		
	Below 1 year	376	33
	1-3 years	764	67
	3-5 years	0	0
	Above 5 years	0	0

Source: Excel analysis result

As presented in table 4.5, in Butajira branch, from the total 9,460 e-banking services users, 49% of them have been used the services for 3-5 years, 20% of them have been used the services for above 5 years, 18% of them have been used the services for 1-3 years, and 13% are e-banking customers that were using the services for less than 1 year; in Eresha branch, from the total 4,250 e-banking services users, 24% are e-banking customers that were using the services for less than 1 year, 61% of them have been used the services for 1-3 years, 15% of them have been used the services for 3-5 years and no customers that have been used the services for above 5 years; and; in Erinzf branch, from the total 1,140 e-banking services users, 33% are e-banking customers that were using the services for less than 1 year, 67% of them have been used the services for 1-3 years no customers that have been used the services for 3-5 years and above 5 years. From this, it can be understood that most of the customers of the bank those who adopted e-banking services in Butajira branch for 3-5 years and in Eresha and Erinzf branches for 1-3 years.

4.4 Descriptive Statistics of variables

In this study five variables (perceived usefulness, perceived ease of use, perceived risk, attitude of customers to E-Banking and National ICT infrastructure) were identified. Descriptive analysis was conducted on the whole data set for variables in order to understand its nature and types of distribution (average mean and standard deviation) and the results show in table 4.6.

Table 4.6: Descriptive Statistics

Description	Mean	Std. Deviation	N
Customers adopting of E-banking	2.34	1.029	255
Perceived usefulness	2.58	1.161	255
Perceived ease of use	2.40	1.185	255
Perceived risk	2.20	.844	255
Customers attitude	2.16	1.086	255
National ICT infrastructure	2.38	1.093	255

Source: SPSS output of field survey (2018).

To analyze the results, the researcher had distributed closed ended questions for respondents and the response had been summarized and incorporated in the study. Given the inadequate empirical research on this issue, this study designed model for factors affecting effectiveness of e-banking adoption by customers with in commercial bank of Ethiopia Butajira and Erinzf branches.

The result gathered on customers' e-banking adoption with in commercial bank of Ethiopia Butajira and Erinzf branches, table 4.6 indicates the effectiveness of e-banking adoption by customers has a mean of 2.34, which was below the average of agreeing on the items designed to measure the variable. This indicates that most of the customers' didn't adopt the bank e-banking services or the bank e-banking services are not effectively adopted by their customers.

The respondents were asked to raise their views on the perceived usefulness of adopting e-banking. The mean of the perceived usefulness of adopting e-banking by customers as shown in table 4.6 was 2.58, which was less than the average of agreeing on the items designed to measure the variable. This implies that customers of the bank did not understand the usefulness adopting

e-banking. The standard deviation of the perceived usefulness of adopting e-banking by customers as shown in the table 4.6 was 1.161, which was far from the mean.

According to the data about how customers perceived e-banking services ease of use, table 4.6 displayed a mean of 2.40, which was below the average of agreeing on the items designed to measure the variable. This indicates that most of customers of the bank did not perceive using e-banking services are easy.

As table 4.6 indicated, the result gathered on the customers' level of perceived risk in using e-banking services has a mean of 2.20 which is less than the midpoint and standard deviation of 0.844 that is far from the mean. This indicates that the customers' feels that using e-banking services have risks or customers have concern with security of their transactions in e-banking services.

Based on the customers attitude for the idea of E-Banking, table 4.6 shows that it has a mean of 2.16 and standard deviation of 1.086 which shows, customers did not like the idea of using e-banking services

In respect of National ICT infrastructure, the data presented on table 4.6 displayed a mean of 2.38, which was below the average of agreeing on the items designed to measure the variable. The standard deviation of National ICT infrastructure as shown in the table 4.6 was also 1.093 which was far from the mean. This show, the National ICT infrastructures are not satisfactory to use e-banking services of the bank. The interview results of the mangers also states that reason for the low level of customers' adoption of e-banking services and products as the interview result shows that customers are safety seeker, and they want to keep away from risks. According to the interviewee bank managers, this is because electronic banking services are in inherently risky environment due to the absence of personal contact, physical product evaluation, warranties, or contracts and the customers usually have difficulties in asking for compensation when transaction error occurs. In addition, this indicates that customers might be concerned about the length of time involved in waiting for transaction. Thus, this may explain why many customers refuse to using e-banking services.

4.5 Regression Assumption Checks

The correct use of the multiple regression models requires that several critical assumptions be satisfied in order to apply the model and establish validity (Poole & O'Farrell, 1971). Inferences and generalization about the theory are only valid if the assumptions in analysis have been tested and justified. Hence the following compulsory assumption checks were made.

4.5.1 Normality of ε

This assumption states that value of residuals should be normally distributed across independent variables. To check this assumption we can use SPSS to draw P plot for residuals (Spring, 2002). And as it is presented on figure 4.2 residuals are normally distributed across observations so that the assumption of normality is satisfied.

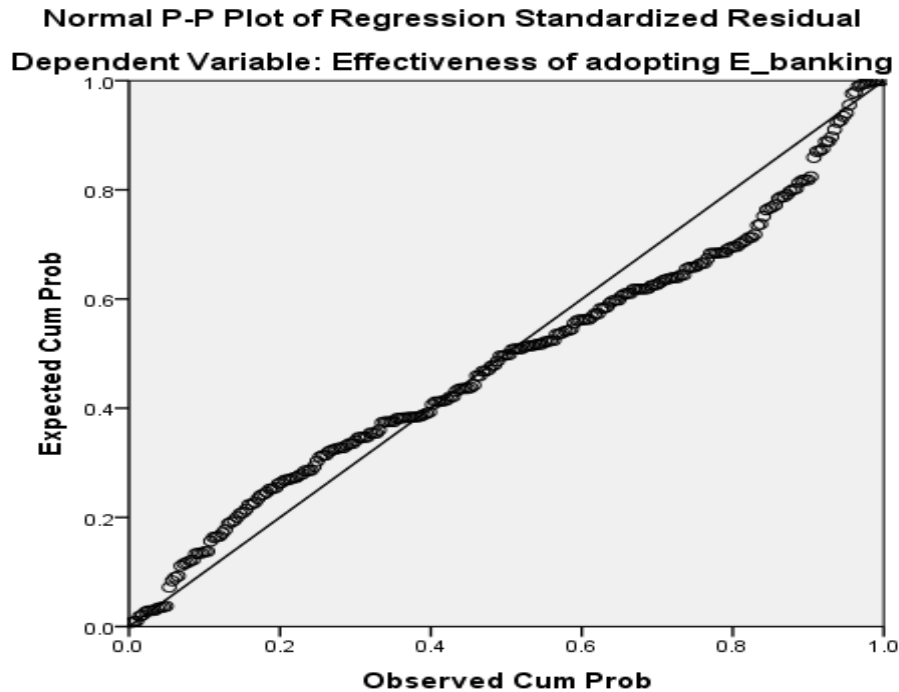


Figure 4.2:- scatter plot

Source: SPSS output of Field survey (2018).

4.5.2 Homoscedasticity

One of the assumptions in multiple linear regression models is homoscedasticity of the residuals that is the variance of unobserved factors unchanged across different segments of the population. The assumption of homoscedasticity fails whenever the variance of the unobserved factors changes across different segments of the population which are determined by the different values

of the explanatory variables and is called heteroscedasticity. Whenever it is marked it can lead to distortion of findings and weaken the overall analysis & statistical power of analysis (Spring, 2002). To check this we can see the figure of scatter plot for residuals as it is presented in figure 4.3. As we see the scatter plot they are not in symmetric form this indicates that residuals have equal variance. Hence the assumption of homoscedasticity is satisfied.

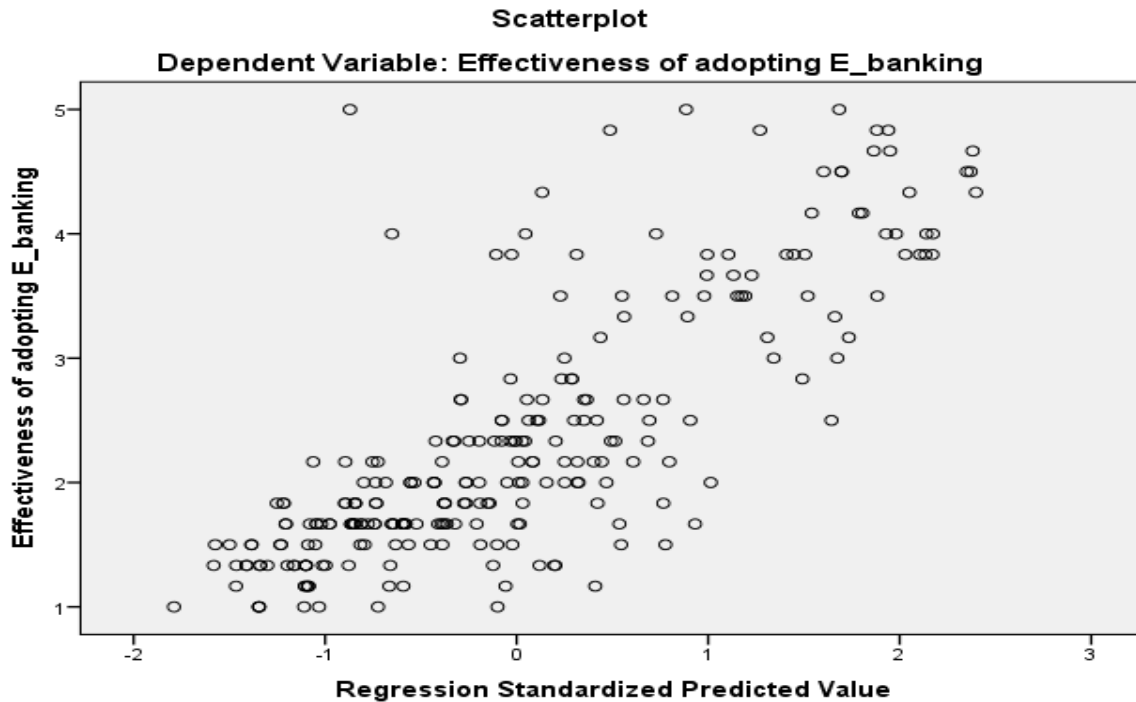


Figure 4.3: Scatter plot
Source: SPSS output of Field survey (2018).

4.5.3 Multicollinearity

Collinearity also called (multicollinearity) refers to the assumption that the independent variables are uncorrelated (Darlington, 1968).The researcher is able to interpret regression coefficients as the effects of the independent variables on the dependent variables when collinearity is low (Keith, 2006). This means that we can make inferences about the causes and effects of variables reliably. Multicollinearity occurs when several independent variables correlate at high levels with one another, or when one independent variable is a near linear combination of other independent variables (Keith, 2006). The more variables overlap (correlate) the less able researchers can separate the effects of variables.

Hence before testing the hypothesis, the regression assumption of multicollinearity was checked. According to Gujarati (2004), the superior method to detect high multicollinearity is using variance-inflating factor (VIF). That is if the VIF of the IVs are 10 or higher, it indicates the existence of high multicollinearity and if the VIF of the IVs less than 10, multicollinearity is not a threat to the study. VIF indicate the factor by which the variance of the estimate is inflated due to multicollinearity. Therefore, to detect the problem of multicollinearity, the researcher used variance-inflating factor (VIF) in this study.

As is shown in table 4.8, the VIF of this study is found to be 7.074, which is less than 10. Therefore according to guideline there was no multicollinearity between independent variables and the assumption of multicollinearity is satisfied.

4.6 Correlation Analysis

In addition to VIF, correlation coefficients are also helpful to examine the possibility of collinearity or multicollinearity. That is, Multicollinearity is a serious problem if the correlation coefficients between two repressors are high, say .80 (Gujirati, 2005). But, this study highest correlation result is 0.558 that is the correlation between perceived usefulness and perceived ease of use (table 4.7). This indicates that problem of multicollinearity is not a threat in the study.

Table 4.7: Pearson Correlation result

		Perceived usefulness	Perceived ease of use	Perceived risk	Customers attitude	National ICT infrastructure	Effectiveness of adopting E-banking
Perceived usefulness	Pearson Correlation	1	.558**	.010	.413**	.476**	.713**
	Sig. (2-tailed)		.000	.870	.000	.000	.000
	N	255	255	255	255	255	255
Perceived ease of use	Pearson Correlation	.558**	1	-.001	.243**	.448**	.556**
	Sig. (2-tailed)	.000		.993	.000	.000	.000
	N	255	255	255	255	255	255
Perceived risk	Pearson Correlation	.010	-.001	1	.082	.194**	-.066
	Sig. (2-tailed)	.870	.993		.191	.002	.294
	N	255	255	255	255	255	255
Customers attitude	Pearson Correlation	.413**	.243**	.082	1	.274**	.431**
	Sig. (2-tailed)	.000	.000	.191		.000	.000
	N	255	255	255	255	255	255
National ICT	Pearson Correlation	.476**	.448**	.194**	.274**	1	.596**

infrastructure	Sig. (2-tailed)	.000	.000	.002	.000		.000
	N	255	255	255	255	255	255
Effectiveness of adopting banking	Pearson Correlation	.713**	.556**	-.066	.431**	.596**	1
	E- Sig. (2-tailed)	.000	.000	.294	.000	.000	
	N	255	255	255	255	255	255

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

4.6.1 Relationship between perceived usefulness and customers' adoption of e-banking services

The results shown in table 4.4 revealed that there is a positive relationship between perceived usefulness and customers' adoption of e-banking services ($r = 0.713$).

4.6.2 Relationship between perceived usefulness and customers' adoption of e-banking services

The results shown in table 4.7 revealed that there is a positive relationship between perceived ease of use and customers' adoption of e-banking services ($r = 0.556$).

4.6.3 Relationship between perceived risks and customers' adoption of e-banking services

The results shown in table 4.7 revealed that there is a negative relationship between perceived risks and customers' adoption of e-banking services ($r = -0.066$).

4.6.4 Relationship between customers' attitude and customers' adoption of e-banking services

The results shown in table 4.7 revealed that there is a positive relationship between customers' attitude and customers' adoption of e-banking services ($r = 0.431$).

4.6.5 Relationship between National ICT infrastructure and customers' adoption of e-banking services

The results shown in table 4.7 revealed that there is a positive relationship between adequate and quality National ICT infrastructure and customers' adoption of e-banking services ($r = 0.596$).

4.7 Regression Analysis & test of hypothesis

A regression was run to determine the predictive power of the independent variables (perceived usefulness, perceived ease of use, perceived risk, attitude of customers to E-Banking and

National ICT infrastructure) in explaining customers' adoption of e-banking services towards CBE in Butajira and Erinzf branches. The results have been presented in the table 4.8 below.

Table 4.8: Regression result

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	.453	.149		3.046	.003		
Perceived usefulness	.375	.045	.423	8.388	.000	.563	1.777
Perceived ease of use	.123	.041	.141	2.995	.003	.643	1.556
Perceived risk	-.176	.047	-.144	-3.702	.000	.945	1.058
Customers attitude	.138	.040	.146	3.484	.001	.818	1.222
National ICT infrastructure	.300	.043	.319	6.961	.000	.684	1.461

a. Dependent Variable: Effectiveness of adopting E-banking

Source: SPSS output of Field survey (2018).

Hence, the initial model of this paper can be formulated as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \dots + \beta_N X_N + C \text{ (Econometrics, Gujarati)}$$

$$CAES = .453 + .375(PU) + .123(PEU) - .176(PR) + .138(AC) + .300(NICTI) + C$$

4.7.1 Test of the goodness of fit of the model

The predictive power of the model is shown by adjusted R-Square (the coefficient of determination). R-Square is a measure of how well the model is able to predict the changes in the actual data. R-Square ranges between 0 and 1, and values over 0.50 indicate a good fit between the predictions and actual data (Gujarati, 2004). Hence as it is shown in table 4.9, adjusted R-square is .636 which is over .500 and this indicates how good the predictive power of the model is.

Therefore, at 95% coefficient confidence level, the independent variables (perceived usefulness, perceived ease of use, perceived risk, attitude of customers to E-Banking and National ICT infrastructure) in combined can predict the changes in the actual data of customers' adoption of

e-banking services and the remaining is explained by other factors which were not mentioned in this study represented as error term (ϵ).

Table 4.9: model summery

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.802 ^a	.643	.636	.621

a. Predictors: (Constant), National ICT infrastructure, perceived risk, Customers attitude, perceived ease of use, perceived usefulness

b. Dependent Variable: Effectiveness of adopting E-banking

Source: SPSS output of Field survey (2018).

4.7.2 Anova result

F-statistics test the overall significance of the model under study. F-calculated is compared with F-tabulated where F- calculate is greater than F-tab we reject the null hypothesis (Ho) and conclude that the variable is statistically significant in explaining the dependent variable. From the table 4.10, it shows that F-statistics is 89.604 and Prob (F-statistic) = 0.000, we therefore reject null hypothesis and accept alternative hypothesis. Thus, it implies that the model is statistically significantly different from zero. In other words, the explanatory variables jointly considered are significantly important in explaining variation in the dependent variable – customers’ adoption of e-banking services.

Table 4.10: Anova table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	172.961	5	34.592	89.604	.000 ^b
	Residual	96.128	249	.386		
	Total	269.090	254			

a. Dependent Variable: Effectiveness of adopting E-banking

b. Predictors: (Constant), National ICT infrastructure, Perceived risk, Customers attitude, Perceived ease of use, Perceived usefulness

Source: SPSS output of Field survey (2018)

4.7.3 Testing of the hypothesis:

To test the hypotheses of the multiple regression analysis we should use the general guideline as decision rule (Gujarati, 2004).

- If $SE(\hat{\beta}_1) > \frac{1}{2}\hat{\beta}_1$, we accept the null hypothesis that is, we can conclude that the estimate β_1 is not statistically significant.
- If $SE(\hat{\beta}_1) < \frac{1}{2}\hat{\beta}_1$, we reject the null hypothesis that is, we can conclude that the estimate β_1 is statistically significant.

Perceived usefulness

H₀₁: Perceived usefulness has no significant effect on customers' adoption of e-banking services. As it shown in table 4.7 above having p value < 0.01, and Beta coefficient of (r=0.375), the multiple regression analysis revealed that:

$$0.045 < 0.375/2, 0.045 < 0.1875$$

This implies that $SE(\hat{\beta}_1) < \frac{1}{2}\hat{\beta}_1$, that is the parameter is statistically significant at 1% level of significance. Therefore, we reject the null hypothesis H₀₁ and accept the alternative hypothesis H₁ that is perceived usefulness has significant effect on customers' adoption of e-banking services. Therefore, when perceived usefulness of e-banking services increases by 1(100%), customers' adoption of e-banking services increases by 0.375 (37.5%) and when perceived usefulness of e-banking services decreases by 1(100%), customers' adoption of e-banking services decreases by 0.375 (37.5%).

Perceived ease of use

H₀₂: Perceived ease of use has no significant effect on customers' adoption of e-banking services.

As it shown in table 4.7 above having p value < 0.01, and Beta coefficient of (r=0.123), the multiple regression analysis revealed that:

$$0.041 < 0.123/2, 0.041 < 0.0615$$

This implies that $SE(\hat{\beta}_2) < \frac{1}{2}\hat{\beta}_2$ which is the parameter, is statistically significant at 1% level of significance. Therefore, we reject the null hypothesis H₀₂ and accept the alternative hypothesis H₂ that is perceived ease of use has significant effect on customers' adoption of e-banking services. Therefore, when perceived ease of use of e-banking services increases by 1(100%), customers' adoption of e-banking services increases by 0.123 (12.3%) and when perceived ease of use of e-banking services decreases by 1(100%), customers' adoption of e-banking services decreases by 0.123 (12.3%).

Perceived risk

H₀₃: Perceived risk has no significant effect on customers' adoption of e-banking services.

As it shown in table 4.7 above having p value < 0.01, and Beta coefficient of (r = -0.176), the multiple regression analysis revealed that:

$$0.047 < 0.176/2, 0.047 < 0.088$$

This implies that $SE(\hat{\beta}_3) < \frac{1}{2}\hat{\beta}_3$ that is the parameter is statistically significant at 1% level of significance but it shows the negative sign. Therefore, we reject the null hypothesis H₀₃ and accept the alternative hypothesis H₃ that is Perceived risk has significant effect on customers' adoption of e-banking services. Therefore, when perceived risks of e-banking services increases by 1(100%), customers' adoption of e-banking services decreases by 0.176 (17.6%) and when perceived risks of e-banking services decreases by 1(100%), customers' adoption of e-banking services increases by 0.176 (17.6%).

Customers' attitude

H₀₄: Customers attitude has no significant effect on customers' adoption of e-banking services.

The results shown in table 4.7 revealed that there is a positive relationship between Customers attitude and customers' adoption of e-banking services (r = 0.138). The multiple regression analysis confirmed that:

$$0.040 < 0.138/2, 0.040 < 0.069$$

This implies that $SE(\hat{\beta}_4) < \frac{1}{2}\hat{\beta}_4$ that is the parameter is statistically significant at 1% level of significance. Therefore, we reject the null hypothesis H₀₄ and accept the alternative hypothesis

H₄ that is Customers attitude has significant effect on customers' adoption of e-banking services. Therefore, when customers' attitude in using e-banking services increases by 1(100%), the adoption of e-banking services by customers' increases by 0.138 (13.8%) and when customers' attitude in using e-banking services decreases by 1(100%), the adoption of e-banking services by customers' decreases by 0.138 (13.8%)

National ICT infrastructure

H₀₅: National ICT infrastructure has no significant effect on customers' adoption of e-banking services.

The results shown in table 4.7 revealed that there is a positive relationship between availability of adequate and quality National ICT infrastructure and customers' adoption of e-banking services ($r = 0.300$). The multiple regression analysis confirmed that:

$$0.043 < 0.300/2, 0.043 < 0.150$$

This implies that $SE(\hat{\beta}_4) < \frac{1}{2}\hat{\beta}_4$ that is the parameter is statistically significant at 1% level of significance. Therefore, we reject the null hypothesis H₀₅ and accept the alternative hypothesis H₅ that is availability of adequate and quality National ICT infrastructure has significant effect on customers' adoption of e-banking services. Therefore, when the adequacy and quality of National ICT infrastructure increases by 1(100%), customers' adoption of e-banking services increases by 0.300 (30.0%) and when the adequacy and quality of National ICT infrastructure increases by 1(100%), customers' adoption of e-banking services decreases by 0.300 (30.0%).

4.8 Discussions

As shown in Table 4.5, the regression analysis shows that the entire model has a significant effect on customers adoption of e-banking .The regression results indicate that there is a positive and significant relationship between perceived usefulness and on customers adoption of e-banking ($\beta = 0.375, P < 0.001$). This shows that 37.5% of the variance of customers' adoption of e-banking is explained by perceived usefulness. Thus the null hypothesis (H₀₁) is rejected and the alternative hypothesis (H₁) is accepted.

The regression results indicate that there is a positive and significant relationship between perceived ease of use and on customers adoption of e-banking ($\beta = 0.123, P < 0.001$), thus, the null

hypothesis (Ho2) is rejected and the alternative hypothesis (H2) is accepted. This suggests that the easier e-banking services are to use, the more customers' would adopt of e-banking services.

Regression analysis in table 4.5 also shows that customer attitude has a significant effect of the customers' adoption of e-banking ($\beta = 0.138$, $P < 0.001$). The regression analysis also shows that 13.8% of the variance of customers' adoption of e-banking is explained by customer attitude. This suggests that the more the customers have positive attitude to e-banking services are to use, the more customers' would adopt of e-banking services. Thus the null hypothesis (Ho4) is rejected and the alternative hypothesis (H4) is accepted.

Regression analysis in table 4.5 also shows that availability of National ICT infrastructure has a significant effect of the customers' adoption of e-banking ($\beta = 0.300$, $P < 0.001$). The regression analysis also shows that 30.0% of the variance of customers' adoption of e-banking is explained by availability of National ICT infrastructure. This suggests that the more the availability of National ICT infrastructure, the more customers' would adopt of e-banking services. Thus the null hypothesis (Ho5) is rejected and the alternative hypothesis (H5) is accepted.

This result is consistent with previous TAM studies that test and validate the significant effect of perceived usefulness, perceived ease of use and positive customer attitude in customers' adopting e-banking services. The result of availability of National ICT infrastructure is consistent with previous ETO studies that test and validate the significant effect of availability of National ICT infrastructure in customers' adopting e-banking services. This suggests that perceived usefulness, perceived ease of use, positive customer attitude and availability of National ICT infrastructure are shown to be significant determinants of customers' in adopting-banking services in Butajira area branches. But, it can be noted that perceived usefulness ($\beta = 0.375$) and availability of National ICT infrastructure ($\beta = 0.300$) have a stronger impact on customers' adoption of e-banking services than perceived ease of use ($\beta = 0.123$) and positive customer attitude ($\beta = 0.138$).

However, regression results show that there is a negative and significant relationship between perceived risk (PR) toward e-banking services ($\beta = -0.176$, $P < 0.001$). This indicates that perceived risk has a significant impact on customers' in adopting e-banking services. This shows that banks' customers' are not confident in e-banking services.

Regarding perceived usefulness, the result of this study supports the idea expressed in Shaikh (2014) which states the important benefits associated with electronic banking like Saves time,

minimizes the risk of carrying cash and minimizes the cost of transactions are the driving force for the adoption of electronic banking.

In relation to perceived ease of use, the result of this study supports the idea expressed in Gardachew (2010), that is, low literacy rate is a serious impediment for the adoption of E-banking in Ethiopia as it hinders the accessibility of banking services and for citizens to fully enjoy the benefits of E-banking, they should not only know how to read and write but also possess basic ICT literacy to which customers should perceive learning to use and using the technology becomes easy. Similarly the study finding is consistent with the results of Wondwossen&Tsegai (2005) in which learning how to interact with bank website was considered as hindrance factors for the use of electronic payment system in Ethiopia.

In connection to the result of perceived risk, the finding is consistent with the results of Booz et al. (1997) in which he identified security concern was the top ranked factor for users not adopting Internet Banking in Latin America and the result of Laukkanen (2008) research, which states risk is considered as the most intense barrier and the greatest concern in the adoption of Internet Banking. The result also supports the finding of Sathye (1999) which concluded that 67 percent of banks in the USA felt that security is a key anxiety in Internet Banking adoption for a survey conducted by Thorton Consulting (1996) in USA.

Furthermore the fourth variable, i.e., attitude of customers in adopting electronics banking, the finding is consistent with the results of Hoppe et al. (2001) study which were conducted based on theory of planned behavior (TPB) and the diffusion of innovations theory (DIT) that shows intention to adopt Internet banking can be predicted by attitudinal factors, perceived behavioral control factors to a lesser degree, and not by subjective norms.

Finally, in relation to availability of National infrastructure facility, the result of this study supports the idea expressed in Ghazi & Khalid (2012) in which the researchers' found that, the most important barriers for E-business growth are technological issues i.e., quality of internet to be the most prominent. Similarly the study finding is consistent with the results of Wondwossen&Tsegai (2005) in which lack of appropriate infrastructure for E-payment and lack of internet facilities with customer were considered as hindrance factors for the use of electronic payment system in Ethiopia.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

The previous chapter presented the results and analysis of the study about factors affecting customers' e-banking adoption with CBE in Butajira and Erinzf branches. This chapter provides the conclusions and recommendations in line with the findings of the study.

5.1 Conclusions

This study aims at investigating the factors affecting the adopting of electronic banking service in case of commercial bank of Ethiopia branches at butajira towns. To achieve the proposed objective, the researcher used an integrated Environment–Technology-organization (ETO) model and Technology-Acceptance (TAM) model as basic research frame works. In addition, mixed research approach was employed and the study clearly indicates the effect of independent variable on dependent variable.

The study revealed that the benefits associated with adoption of e-banking service are the driving force for the adoption of e-banking by customers. These benefits are the perceived ease of use of e-banking in which the services does not require a lot of mental effort/literacy. The other benefits that drive for the adoption of e-banking service is perceived usefulness, in which, it is used for time saving and cost reduction, it helps to accomplish tasks quickly, it is convenient in terms of 7 days and 24 hours service and it is more accessible to users than visiting a bank.

E-banking services, such as ATM, mobile banking, internet banking, and POS are not well adopted by CBE customers. This is due to low level of ICT infrastructure which result poor internet connection to perform online transactions and e-banking system interruption and inefficiency and customers' poor attitude to e-banking. In addition to the above two basic factors affecting adoption of E-banking in CBE, result of the study also shows that security risk and lack of trust on are other major factors affecting the adoption of E-banking service by customers in CBE.

The problems associated with the adoption of E-banking service by customers in CBE are: Low level of awareness about the E-banking services /ATM, internet, POS, mobile banking/ by customers which lead to misunderstand, misinterpret and misuse the service; Customers upset long linings because of shortage of boxes, mainly ATM box; Customers waste their scarce

working times due to shortage of Electric power; Promotion of the merits of E-banking services of CBE to their customers is limited; The bank lacks sufficient technical and administrative skills to support of the bank customers.

In general, the findings of this study offer additional insights into the current customers' E-banking adoption situation and its implications in CBE. Furthermore, the understanding of the problems/barriers to customers' E-banking adoption identified in this study may help to identify the best course of actions to promote its development.

5.2 Recommendations

In order to apply successful E-banking service in CBE adoption by their customers', the two branches need to establish a clear promotional stratagem to increase customers' attitude to e-banking service.

Although E-banking need huge amount of capital used for infrastructure and heavy investment for installation and maintenance of systems, the increased benefits to customers and banks, have positive impact of the adoption of e-banking. Therefore E-banking provides numerous benefits to both banks and Customers. Under the globalization the innovation of ICT is vital. Thus positive impact overrides the negative impact. Therefore full adoption of E-banking is required.

For the successful implementation of E-banking system, ICT infrastructure is a major prerequisite, so government, should support banking sector by investing on ICT infrastructure development.

The level of security risk associated with E-banking product or service, such as ATM, internet banking, mobile banking and others are one of the main factors that prevent customers to use the E-banking product or service, improvements are required to ensure client confidence.

To exploit the benefit of E-banking system, CBE, specially the two branches, needs to familiarize their customers with the processes and benefits of the system and should pay special attention to deliver service to customers by using E- banking system, which can easily be accessible.

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APPENDIX

Wolkite University

College of Business and Economics

Masters of Business Administration

Appendix A: Questionnaire

Dear respondent,

This questionnaire is designed specifically to carry out a research to collect information about factors affect adoption of E- banking service in case of commercial bank of Ethiopia: In case of Butajira, and Erinzf as a partial fulfillment of the requirements for the Master of Business Administration (MBA) degree at Wolkite University. The researcher kindly requests you to attempt all the questions in the questionnaire since successful completion of this study depends on your genuine response.

Your response will treat strictly confidential and will use only for academic purpose. No need to write your name.

Thank you in advance for your cooperation!

Yours AddisuAlemayehu

For more information, you can contact the researcher with the following address:

Tell: +251-920520875

**Please, Put a tick mark (✓) as per the questions required in the box.*

Section I: Demographic profile of respondents

1. Gender:

- 1) Male 2) Female

2. Age:

- 1) below 20
2) 20-30
3) 31-40
4) 41-50
5) above 51

3. Educational level:

- 1) Below 12th grade
2) Diploma
3) University and college student
4) degree holder
5) Master's Degree

4. Occupation:

- 1) civil servant
2) Private business owner
3) Private business employee
4) Students
5) others

5. Type of service/s/ frequently used:

- 1) ATM
2) Internet banking
3) Mobile banking
4) POS
5) ATM and Internet banking
6) ATM and Mobile banking
7) ATM and POS
8) Internet banking and Mobile banking
9) Internet banking and POS

- 10) Mobile banking and POS
- 11) ATM,Internet banking and Mobile banking
- 12) ATM,Internet banking and POS
- 13) ATM,Mobile banking and POS
- 14) Internet banking, Mobile banking POS
- 15) ATM,Internet banking, Mobile banking and POS
- 16) None

6. Monthly income (in Eth. Birr):

- 1) up to 3200
- 2) 3201- 5250
- 3) 5251-7800
- 4) 7801-10900
- 5) Above 10,900

7. Length of E-banking services/products use:

- 1) Less than 1 year
- 2) 1-3 years
- 3) 3-5 years
- 4) 5 years and above
- 5) None

Section II: Questionnaires related with the factors that affect the adoption of Electronic banking service in Butajira area branches of CBE.

Ref. No.	Description	Strongly agree /5/	Agree /4/	Neutral /3/	Disagree /2/	Strongly disagree /1/
1	Perceived usefulness					
1.1	I think that using the electronic banking services would enable me to accomplish my tasks more quickly					
1.2	I think that using the electronic banking services would make it easier for me to carry out my tasks.					
1.3	E-banking such as, Internet banking ,Mobile banking, ATM and POS are convenient, in terms of 7 days and 24 hours service					
1.4	E-banking is more accessible to users than visiting a bank					
1.5	The transactions in Internet banking are at a lower price, or at no cost.					
2	Perceived Ease of Use					
2.1	I think that learning to use electronic banking services would be easy.					
2.2	I think that interaction with electronic banking services does not require a lot of mental					

	effort/literacy.					
2.3	I think it is easy to use electronic banking services to accomplish my banking tasks					
2.4	The bank provide guidelines on the use of electronic banking facility					
3	Perceived risk					
3.1	The reputation and size of the bank provides assurance of online banking integrity.					
3.2	I am quite certain what to expect from online banking information system.					
3.3	Online banking facility offers secure personal privacy.					
3.4	I believe that online banking system would act in my best interest.					
3.5	Online banking system keeps its promises and commitments.					
3.6	The bank is not fast to respond/rectify when transactional errors occur (like: when ATM jammed payment cards or customers' accounts deducted without being paid the full or part of the amount).					

4	Customers attitude To E-Banking					
4.1	Using electronic banking services is a good/exciting idea					
4.2	I like the idea of using electronic banking services					
4.3	Provided that I may have access to online banking system in future, I will use it					
5	National ICT infrastructure					
5.1	Internet connection is good enough to perform online transactions in Butajira town.					
5.2	Mobile banking services perform well due to sufficient network.					
5.3	This bank provides most of Technology-based services/products and the services are almost always available.					
5.4	The system does work efficiently every time we need it, as the bank promised					
6	Effectiveness of using E-banking services					
6.1	Customers misunderstand, misinterpret, misuse the service because of low level of awareness about the E-banking services /ATM, internet, POS, mobile banking/.					

6.2	Customers upset long linings because of shortage of boxes, mainly ATM box.					
6.3	Customers waste their scarce working times due to shortage of Electric power					
6.4	CBE branch managers continuously promoted the merits of E-banking services to their customers to use it.					
6.5	The bank quickly repairs the E-banking system (like ATM boxes) because they have enough technical and administrative skills.					
6.6	There is sufficient technical and managerial support of the bank.					

Source: adopted from Bruce, Felix, Chanda, Edna, & Bernadette (2017)

Thank you again for your cooperation's

Appendix B - Interview guiding questions

1. What are the benefits of E-banking system and service? -----
2. Is there any Legal framework for the adoption of E-banking service in CBE? -----

3. What are the basic factors affecting the adoption of E-banking service in CBE? And why? -----
4. Do you think that customers' adoption of E-banking service in CBE is effective? -----
