



**ST. MARY'S UNIVERSITY SCHOOL OF GRADUATE**

**DEPARTMENT OF MARKETING MANAGEMENT**

**DETERMINANT FACTORS INFLUENCING THE IMPLEMENTATION  
OF ELECTRONIC BANKING IN COMMERCIAL BANK OF ETHIOPIA,**

**ADDIS ABABA**

**BY**

**Nathnael Teshome**

**June, 2019**

**ADDIS ABABA, ETHIOPIA**

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**SCHOOL OF GRADUATE STUDIES FACULTY OF BUSINESS AND ECONOMICS**

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**DECLARATION**

I, the under signed, declare that this thesis is my original work, prepared under the guidance of **Yibeltal Nigussie (Assistant Professor)**. All sources of material used while working on this thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any type of degree.

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## **ENDORSEMENT**

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

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Advisor

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Signature

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## LIST OF ABBREVIATIONS/ACRONYMS

ATM	Automated Teller Machine
A.A	Addis Ababa
CBE	Commercial Bank of Ethiopia
E-banking	Electronic banking
E- Payments	Electronic Payments
ICT	Information and Communications Technology
NBE	National Bank of Ethiopia
POS	Point of Sales Machines
SMS	Short Message Service
SPSS	Statistical Package for Social Science
TOE	Technology Organization Environment
TAM	Technology Acceptance Model
TPB	Technology Planned Behaviour
WWW	World Wide Web

## ABSTRACT

*Electronic banking enhances the development of the banking service, and it is considered as a strategic weapon for banks. Although it provides various benefits for both banks and customers, low level of customers' adoption of E-banking services has been noted. The General objective of the study was to investigate the determinant factors influencing the implementation of E-banking in Commercial Banks of Ethiopia. In order to get a comprehensive data 337 employees of the bank was purposely selected and included in the study. Primary data were collected through a semi-structured questionnaire, & interview. Data was analysed using descriptive statistics and inferential statistics that include both correlation and multiple linear regression. The study focused on the major factors influencing the implementation of E-banking which includes organizational factors, environmental factors, technological factors and strategic factors. The study schemed that there was inadequate technical and managerial skill for the implementation of E-banking, the bank didn't have enough physical support and equipment, insufficient government support, unsatisfactory network infrastructure, inadequate computer skill and technology. Based on these findings, the study recommends that Managers and all staff of CBE should be familiar with concepts, application and advantages of e-banking, government should support banking sector by investing on ICT infrastructure development.*

**Key words:** E-banking, Commercial Bank of Ethiopia, implementation of E-banking

## **CHAPTER ONE INTRODUCTION**

This section address background of the study, statement of the problem, research questions, research objectives, research hypothesis significance of the study, scope, limitation of the study, definition of terms and organization of the study.

### **1.1 Background of the Study**

Business has of late become more reliant on information technology (IT) to gain, prepare, and convey the data to every single applicable client (Bradley, 2009). In addition to the fact that it is basic in the preparing of data, it gives a path to the banks to separate their items and administrations. Banks find that they need to continually advance and upgrade to hold their requesting and observing clients and to give advantageous, dependable, and practical administrations (Brown, 2008).

In order to reduce the volume of cash in circulation and reduce the risk of going about with cash, several electronic payment systems such as payment cards (smart card) and paper- based instrument were introduced by financial regulatory body in Ethiopia. This has encouraged e- payment initiatives such as the establishment of switching companies that facilitate interconnectivity, introduction of payment instruments such as Automated Teller Machine (ATM), web transaction, e- money products such as credit and debit cards and point of sale (POS) which gave rise to significant growth in the use of electronic payment systems (Salimon,2006).The electronic payment system takes the following forms: electronic financial payment system, where payment is through some specified protocols; and (b) smartcard payment system, where the information on the silicon is used to effect payment forservices(Ayo, 2009).

The quick development of the Internet has introduced another host of chances and in addition dangers to business. Today, the Internet is well on its approach to wind up an undeniable. Conveyance and circulation channel and among the shopper arranged applications riding at the cutting edge of this advancement is electronic monetary items and administrations. With the quick dispersion of the Internet, Banking in the internet is quick turning into an option channel to give bank services and financial administrations. The Internet is presently being considered as a vital weapon and will change the way banks work, convey, and go up against each other, particularly when upper hands of customary branch systems are dissolving quickly (Gupta, 2008. Notwithstanding the numerous potential advantages, many getting teeth issues should be

tended to before Internet banking can turn out to be broadly received. This enhances the quality and separation of their items and invigorates monetary advancement by presenting more cutting-edge abilities, administration strategies and innovations like E-Banking.

## **1.2 Background of the organization**

The history of the Commercial Bank of Ethiopia (CBE) dates back to the establishment of the State Bank of Ethiopia in 1942. Later, it was legally established as a share company in 1963. In 1974, CBE merged with the privately-owned Addis Ababa Bank. Since then, it has been playing significant roles in the development of the country. Commercial Bank of Ethiopia is pioneer to introduce modern banking to the country. It has more than 1340 branches stretched across the country as of March 31<sup>st</sup> 2019 and is the leading African bank with assets of 646.69 billion birr as on March 31<sup>st</sup> 2019. It is also the first bank in Ethiopia to introduce ATM service for local users. Currently Commercial Bank of Ethiopia has more than 20 million account holders and the number of Mobile and Internet Banking users also reached more than 1,736,768 as of June 30<sup>th</sup>, 2018. Active ATM card holders reached close to 4.4 million. As of June 30<sup>th</sup>, 2018, 170 ATM machine and 11,796 POS machines were available. Internationally, Commercial Bank of Ethiopia has strong correspondent relationship with more than 50 renowned foreign banks such as Commerz Bank A.G., Royal Bank of Canada, City Bank, HSBC Bank. ([www.combanketh.et](http://www.combanketh.et))

## **1.3 Statement of the Problem**

As indicated by Jensen (2003), most nations in Africa, apart from South Africa have Internet framework just in their real urban communities. Absence of reasonable lawful and administrative structure for E-business and E-instalment is another obstacle for the reception of new innovation in managing banks.

E-banking has been widely used in developed countries and is rapidly expanding in developing countries. Nevertheless, in Ethiopia cash is still the most dominant medium of exchange, and electronic payment systems are observed late to move with rapid expansion of electronic payment systems throughout the developed and the developing world, Ethiopia's financial sector remain behind in expanding the use of the technology. (Gardachew, 2010).

So as to energize encourage e-banking appropriation in developing nations, a superior comprehension of the boundaries and drivers impacting e-banking reception is basic (Zhao et al. 2008). Researches on E-banking system have been done in different countries in the world.

Different factors in the adoption of E-banking have been taken as the main factors of the adoption of new technology by different researchers such as environmental factors by Gardachew, 2010 (researcher focused on challenges, like lack of suitable legal and regulatory framework for e-commerce, poor ICT infrastructure, lack of competitive pressure in the industry), organizational factors by Daghfous And Toufaily 2009 (like Lack of skilled man power, resistance to changes in technology among staff) and technological factors by Humphre, 2008 (Perceived risks on e-banking adoption like security risk and functionality). Strategic factors by Rafiu 2007 (like the emergence of e-banking had made many banks rethink their IT).

However, beside these relevant research findings by different related researchers, the researcher assumes that more study is needed to relate previous research finding can be relevant as to the status of commercial bank of Ethiopia and comparing CBE has 20million account holders and the E-banking users which are 5.2 million ATM holders and 1,736,78 mobile and internet banking users, this means 26% and 0.086% card and mobile and internet banking users respectively ([www.combanketh.et](http://www.combanketh.et)). So, the researcher wants to discover the determinant factors of e-banking implementation which leads to very smaller number of E-banking users in CBE. Accordingly, the purpose of this paper was to address the determinate factors that can influence the implementation of E-banking in the case of Commercial Bank of Ethiopia, Addis Ababa.

#### **1.4 Research Questions**

The research questions were formulated from statement of the problem and were structured in a manner that they were able to capture factors that influence e-banking mainly ATM, mobile and internet banking in line with the objectives identified. The research questions are as follows:

- To what extent do environmental factors influence the implementation of E-banking in Commercial Bank of Ethiopia, Addis Ababa?
- To what extent do technological factors influence the implementation of E-banking in Commercial Bank of Ethiopia, Addis Ababa?
- To what extent do organisation factors influence the implementation of E-banking in Commercial Bank of Ethiopia, Addis Ababa?
- To what extent do strategic factors influence the implementation of E-banking in Commercial Bank of Ethiopia, Addis Ababa?



## **1.5 Objective of the study**

### **1.5.1 General Objective**

The purpose of this study was to investigate the determinant factors influencing the implementation of E-banking in Commercial Banks in Ethiopia, Addis Ababa.

### **1.5.2 Specific objectives of the Study**

This study is guided by the following specific objectives:

- To assess the influence of environmental factors on the implementation of E-Banking in the case of Commercial Bank of Ethiopia, Addis Ababa.
- To examine the influence of technological factors in the implementation of E-banking in Commercial Bank of Ethiopia, Addis Ababa.
- To determine the influence of organisation factors in the implementation of E-banking in Commercial Bank of Ethiopia, Addis Ababa.
- To evaluate the influence of strategic factors in the implementation of E-banking in Commercial Bank of Ethiopia, Addis Ababa.

## **1.6 Research Hypothesis**

The variables of the research hypothesis is derived from the different aspects of the determinant factors influencing the implementation of Electronic Banking which include organizational factor, environmental factor, technological factor and strategic factors.

In order to investigate the relationship among organizational factor, environmental factor, technological factor and strategic factors, the following hypotheses have been developed in the present research:

1:HAOrganizational factors has a positive and significant influence on the implementation of e-banking.

2: HA Environmental factors has a positive and significant influence on the implementation of e-banking.

3: HATEchnological factors has a positive and significant influence on the implementation of e-banking.

4: HAStrategic factors has a positive and significant influence on the implementation of e-banking.

In order to test the above hypotheses, various statistical analyses were carried out in this thesis. These techniques are described in chapter four.

### **1.7 Significance of the Study**

The purpose of the study was to provide a significant role to identify the contributing factors influencing the implementation of e-banking in commercial bank of Ethiopia. In general, the study has the following significance.

- ✓ Since this study proposes, managers can use the findings.
- ✓ This study also includes learning the idea and discoveries on the relationship between E-banking and execution.
- ✓ This study may serve as an input for researchers and other interested people in related topic and to acquire knowledge about the subject matter under the study.
- ✓ Finally, it would be so beneficial of this study by getting experience of how to conduct a research and of course to gain my degree certificate.

### **1.8 Scope of the Study**

The study was limited to surveying and interviewing the Employees of commercial bank of Ethiopia in Addis Ababa City. This is because of Commercial Bank of Ethiopia is now the leading banks in e- banking including mobile banking technology and have many branches and service provided to target customer in the country in order to ensure that the research project is manageable, it is necessary to demarcate the research.

The study did not cover all Banks and many branches of Commercial Bank of Ethiopia in different regions of the country. Thus, the scope of this study is confined to assess factors affecting on the adoption of e-banking of CBE customers in Addis Ababa.

### **1.9 Limitation of the study**

In addition, with given the limited time allocated and budget constraints, the purposive sampling procedure for the qualitative research design may decrease the generalizability of findings and this study might not be generalizable to all districts under the bank domain. Besides, the study is only focused on the determinant factors which influence the implementation of E-banking technology in the commercial bank of Ethiopian with respect to there: -

- Environmental factors;
- Technological factors;
- Organizational factors and strategic factors;

Thus, the study focused on the opinion of bank officials and does not include the customers or public opinion on the subject matter.

### **1.10 Organization of the study**

The research report was organized into five chapters: Chapter one focuses on the background of the study, problem statement, objective of the research, research questions, significance of the study, limitation and scope of the study, definitions of terms and organization of the paper. In chapter two, a range of literatures review was captured there to gather relevant information concerning the factors influencing implementation of E-banking from both the theoretical and empirical literatures and conceptual frame work of the study. In chapter three, detail of methodology followed to achieve results was outlined. It includes description of the study area, research approach, research design, population and sample, data source and types, data collection procedures, ethical considerations and data analysis. Chapter four contained results and discussion from the study supported with findings from other research works. Chapter five focuses on main findings, conclusions and recommendations of the study.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter contains review of the literature in the area of E-banking execution and development and mainly focused on the influencing factors of implementation E-banking technology. This review of literature establishes a framework, which can guide the study.

##### **2.1.1 Definition of E-banking**

E-banking is a form of banking service where funds are transferred through an exchange of electronic signal between financial institutions, rather than exchange of cash, checks, or other negotiable instruments (Kamrul, 2009). E-banking, also known as electronic funds transfer (EFT), is simply the use of electronic means to transfer funds directly from one account to another, rather than by check or cash (Malak, 2007). The term of E-banking often refers to online banking/Internet banking which is the use of the Internet as a remote delivery channel for banking services (Furst&Nolle, 2002). 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. E-banking can be also defined as a variety of platforms such as internet banking or (online banking), TV-based banking, mobile phone banking, and Pc (personal computer) banking (or offline banking) whereby customers access these services using an intelligent electronic device, like PC, personal digital assistant (PDA), automated teller machine (ATM), point of sale (POS), kiosk, or touch tone telephone (Alagheband, 2006).

##### **2.1.2 Different type of E-banking system**

**ATM (Automated teller machine):-** Automated teller machine is a computer controlled device that dispenses and provides other services to customers who identify them with a personal identification number (PIN). An ATM device allows a bank customer to withdraw cash from his account via a cash dispenser (Machine), and the account is debited immediately. A fundamental advantage is that it needs not to be located within the banking premises. It is

usually in stores, shopping malls, fuel stations etc. It saves customers time in service delivery as alternative to queuing in bank halls, customers can invest such time saved into other productive activities. ATMs are a cost-efficient way of yielding higher productivity as they achieve higher productivity per period of time than human tellers (Ojokuku and Sajuyigbe, 2012).

**Point of Sale Terminals:** - This mode of e-banking handles cheque verification, credit authorization, cash deposit and withdrawal and cash payment. It enhances electronic fund transfer at the Point of sales. Thus, customers account would be debited immediately with the cost of purchase in an outlet such as a petrol station or supermarket. The implication of this is that customers can make payment for goods and services without necessarily coming in contact with physical cash as the purchase price would be debited on the buyer's card and credited on the seller's account (Ojokuku&Sajuyigbe, 2012)

**Card System:** - The card system is a unique electronic payment type. The smart cards are plastic devices with embedded integrated circuit being used for settlement of financial obligations. The power of cards lies in their sophistication and acceptability to store and manipulate data, and handle multiple applications on one card securely. Depending on the sophistication, it can be used as a Credit Card, Debit Card (Ojokuku and Sajuyigbe, 2012).

**Debit cards:** - Debit card is a banking card enhanced with ATM and POS features so that it can be used at merchant locations. Debit cards allow you to spend only what is in your bank account. It is a quick transaction between the merchant and your personal bank account. A debit card is linked to an individual's account, allowing funds to be withdrawn at the ATM and point of sale without writing a cheque. When using a debit card to pay for goods and services, the purchase amount is deducted from the cardholder's checking account. The types of debit card include online debit card and offline debit card. With offline debit card, debit is not made immediately. Benefits of using a debit card include making the payment process at the checkout counter quicker and more convenient, eliminating the need to carry a cheque book and a lot of cash, using it at locations where personal cheques are not accepted, and reducing the possibility of loss or theft of cash (Okoye, 2013).

**Prepaid debit cards:** - These are debit cards not usually linked to a customer account. They must be funded before being used by cardholders. Prepaid debit cards are identified with such names like cash cards, value cards, and Naira cards etc. prepaid cards can be used as gift cards

students ID cards, Government payment card, payroll card, Bursary card, insurance cards, travel cards etc. (Commercial bank of Ethiopia, 2018)

**Credit Cards:** - A credit card is different from a debit card in that it does not remove money from the user's account after every transaction. In the case of credit cards, the issuer lends money to the consumer (or the user) to be paid to the merchant. A credit card allows the consumer to revolve their balance at the cost of having interest charged. The parties involved in a credit card transaction include cardholder, card issuing bank, merchant, acquiring bank, independent sales organization, merchant account, credit card association, transaction network, and affinity partner (Commercial bank of Ethiopia, 2018).

**Internet banking:** -According to Booz, Allen & Hamilton (1999), Internet banking refers to systems that enable bank customers to access accounts and general information on bank products and services through a personal computer (PC) or another intelligent device.

**Mobile banking:** - This mode of e-banking primarily uses mobile phones as the electronic devices. Mobile phone gives customer the opportunity to operate their account with bank as long as their phones and network services provider support the SMS (short messaging service) which would enable the customer check account balance (Ojokuku&Sajuyigbe, 2012).

### **2.1.3 Evolution of E-banking**

Since the late 1990s E-banking has developed from virtual insignificance to tens of millions of users worldwide (OECD, 2001). However, E-banking is the product of different generations of electronic transactions. The current web-based internet is the latest of several generations of systems: Automated Teller Machine (ATMs), Phone Banking, PC or House Banking. Automated Teller Machines (ATMs) were the first well-known machines to provide electronic access to customers where as in phone banking, users call their banks computer system on their ordinary phone and use the phone keypad to perform banking transactions. PC banking superseded phone banking and allowed users to interact with their bank by means of a computer with a dial-up modem connection to the phone network. Phone and PC banking entailed maintenance costs associated with keeping up to date with diverse modems and with avoiding prohibitively complex installation procedures. After those generations Deutsche Bank launched the very first Internet banking project in Latin America in 1996 and Citibank has developed a special e-toolkit across all its branches worldwide (UNCTAD, 2002). E-banking uses the web browser for the user interface and the Internet for data transfer and

download of software, and so has a potential for reducing maintenance costs. For users, E-banking provides current information, 7x24 accesses to banking services. The primary services provided by e-banks are transferring money among one's own accounts, paying bills, and checking account balances. Loans, brokering, share trading, service bundling, and hosts of other financial services are being added to these primary services). E-banking is widely used in, among other places (Dewan&Seidmann, 2001).

## **2.2 Theoretical studies related with E-banking**

### **2.2.1 E-banking Risks**

Although E-banking has bright prospects, it involves some financial risks as well. The major E-banking risks according to FSA (2010) include: -

**Reputational risk:** - This is considerably heightened for banks using the Internet. For example, the Internet allows for the rapid dissemination of information, which means that any incident, either good or bad, is common knowledge within a short space of time. Internet rumors can easily become self-fulfilling prophecies. The speed of the Internet considerably cuts the optimal response times for both banks and regulators to any incident. Banks must ensure their crisis management processes are able to cope with Internet related incidents (whether they be real or hoaxes). Any problems encountered by one firm in this new environment may affect the business of another, as it may affect confidence in the Internet as a whole. There is therefore a risk that one rogue e-bank could cause significant problems for all banks providing services via the Internet. This is a new type of systemic risk and is causing concern to E-banking providers. Overall, the Internet puts an emphasis on reputational risks. In addition, legal risks (e.g. without proper legal support, money laundering may be influenced); Strategic risks; credit risks; market risks; and liquidity risks are also E-banking risks. Therefore, identification of relevant risks, and formulation and implementation of proper risk mitigation policies and strategies are important for banks while performing E-banking. Among these security risk that affects the network system is the major one FSA.

**Strategic Risk:** - E-banking is relatively new and as a result there can be lack of understanding among senior management about its potential and implications. People with technological but not banking skills can end up driving the initiatives. E-initiatives can spring up in an incoherent and piecemeal manner in firms. They can be expensive and can fail to recoup their cost. Furthermore, they are often positioned as loss leaders (to capture market

share), but may not attract the types of customers that banks want or expect and may have unexpected implications on existing business lines.

**Business Risk:** - Business risk is also significant in E-banking. Given the newness of E-banking, nobody knows much about whether E-banking customers will have different characteristics from the traditional banking customers. They may well have different characteristics. This could render existing score card models inappropriate, thus resulting in either higher rejection rates or inappropriate pricing to cover the risk. Banks may not be able to assess credit quality at a distance as effectively as they do in face to face circumstances. It could be more difficult to assess the nature and quality of collateral offered at a distance, especially if it is located in an area the bank is unfamiliar with (particularly if this is overseas).

**Security:** - Security issues are sources of concern for everybody more especially as it concerns banking industry. E-banking are prone to security breaches such as fraud, theft of commercially sensitive or financial information, defacement of web sites or denial of service and flaws in system design and/or set up leading to security breaches. All these security breaches have potentially serious financial, legal and reputational implications.

### **2.2.2 Payment Systems in Ethiopia**

A payment is the transfer of money from one party (such as a person or company) to another. A payment is usually made in exchange for the provision of goods, services or both, or to fulfil a legal obligation. The simplest and oldest form of payment is barter, the exchange of one good or service for another.

In the modern world, common means of payment by an individual include money, cheque, debit card, credit card, or bank transfer. Currently cash and checking transfer are the dominant payment system in Ethiopia (Wondwossen&Tsegai, 2005).

Currently the usage of credit card in Ethiopia is very low. There is no issuer of local and international credit cards. But there are some business firms (e.g. Hotels, supermarkets, etc) that accept international credit card. This payment system is mainly used by foreigners and Ethiopians residing abroad as they come to Ethiopia and want to get money using their credit card. The Ethiopian airlines currently provide an option for its customers to buy flight tickets online using their credit card (Wondwossen&Tsegai, 2005).



### **2.2.3 Benefit of Adopting E-banking for Banks**

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

Under the view of the author, once customers become familiar with the utilization of full-service E-banking, it is unlikely that they will change to another financial institution.

Such an argument can be supported by the consumer behaviour theory that switching costs are often very high in terms of time and efforts by consumers. Finally, the author emphasizes that the implementation of E-banking can bring about many competitive advantages for banks in today's highly competitive banking market.

E-banking can improve customer satisfaction with the bank due to the fact that it makes customers less price sensitive, and improve their intention to repurchase, and more loyalty to the bank via providing more positive words of mouth about the bank than other bank customers.

### **2.3 Empirical review**

Electronic development in banking industry can be followed back to 1970, when the computerization of budgetary establishments picked up energy (Malak, 2007), However; a noticeable nearness of this was obvious to the clients since 1980, with the presentation of ATM. Imaginative-banking has developed from that point forward, supported by innovative advancements in the media communications and data innovation industry. The early decade of the 1990s saw the development of automated voice response (AVR) innovation. By utilizing the AVR Technology, banks could offer phone-banking offices for budgetary administrations. With further headways in innovation, banks could offer administrations, through PC possessed and worked by costumers whenever it might suit them, using intranet appropriateness programming. The clients of these administrations were, in any case, predominantly corporate clients as opposed to retail ones (Sohail, 2010). The security first system bank was the

principal Internet banking on the planet that was inherent 1995 in USA. After that some renowned banks presented their internet banking in a steady progression, for example, Citibank and bank of America. Some related studies are directed by various specialists in various parts of the world. Be that as it may, there are constrained quantities of studies led in Ethiopia on the execution of e-Banking by business banks.

### **2.3.1 Environmental factors and implementation of E-banking**

Gardachew (2010) led explore on the execution of e-Banking in Ethiopia. The point of his study was centred on breaking down the status of electronic banking in Ethiopia and explores the fundamental difficulties and chances of executing E-Banking framework. The author led a review on the current working style of banks and distinguishes a few difficulties of utilizing e-Banking framework, for example, absence of reasonable legitimate and administrative casing works for E-trade and E-instalments, political insecurity in neighbouring nations, high rates of lack of education and nonattendance of money related systems those connections diverse banks. Wondwossen and Tsegai (2009) likewise considered on the difficulties and chances of E Banking in Nigeria; their goal was concentrating on of E-Banking hones in creating nations, Africa and Nigeria. The authors utilized meeting and on location perception to explore difficulties to E-Banking in Nigeria and found that, the fundamental hindrances to the improvement of E-Banking are, absence of clients trust in the activities, Unavailability of instalment laws and directions especially for E-Banking, Lack of talented labour and continuous influence disturbance.

As indicated by Wondwossen and Tsegai (2009), a satisfactory legitimate structure and security system could encourage the utilization of E-Banking, which is repudiating with the finding of the past study. Gerrard (2008) in their study in Singapore recognize hazard to be an imperative element for Internet Banking appropriation. All respondents who did not utilize Internet Banking administrations had a negative view of the security in Internet Banking. The respondents saw that there were numerous security dangers when utilizing the internet. They felt the protection was a worry, feeling all their money related data could be in risk. Hazard was one of the two most much of the time said figures their study; Concern about hazard was specified by all respondents. Sathye (2009) on the selection of Internet Banking by Australian buyers additionally recognized, security worries as key consider internet banking appropriation. An investigate Internet Banking in Australia finds that, security worries among banks and clients are keeping both far from Internet Banking (Sathye, 2009)

### **2.3.2 Organisation factors and the implementation of E-banking**

Daghfous and Toufaily (2009) directed a study on the achievement and basic calculates selection of E-Banking by Lebanese banks. The exploration was directed on the components that can prompt to achievement the appropriation of E-Banking and alternate variables that can constitute as boundary to its selection, it concentrates on the authoritative, auxiliary and vital elements which can quicken or, actually, moderate the reception of this electronic mode. Lebanese market, with an aggregate of 57 banks, 31 of them work globally and 26 are entirely nearby were utilized to assemble information. The consequences of their study demonstrates that the authoritative factors (bank measure, utilitarian divisions, specialized staff, specialized infrastructure, thought dangers, leaders' global experience and dominance of advancement) are factors which apply noteworthy effect on the reception of E-Banking, among the basic qualities, the outcome established that inner mechanical environment of the bank is an essential calculate deciding the appropriation of E-Banking, additionally the outcome demonstrates that banks which are creating in the universal scale will probably embrace E-Banking developments. At last, the consequence of the study demonstrated that degree of infiltration of e-banking in the development period of a developing business sector has an essential relationship with the change of the business execution.

The other expressive contextual investigation examination led by Humphrey (2008) on 'Components affecting the reception of internet Banking in Oman, expected to recognize the fundamental potential variables or hindrances that are as of now restraining the fuse or selection of E-trade applications in the Omani Banking area. Information, utilized as a part of their study was gathered utilizing semi organized meetings and study survey and in addition checking on some bank archives. The consequences of their study give a Pragmatic picture about the reception of E-Commerce applications in the center money related part space of Oman. One of the fundamental discoveries is that security and information secrecy issues have been a noteworthy hindrance. The-banking area was hesitant to utilize E-trade applications as they felt that exchanges led electronically were interested in programmers and infections, which are outside their ability to control.

Absence of top administration support is the other repressing variable in the appropriation of electronic trade applications according to their finding, The investigation of Mayer (2008) on critical success factors (CSF) (CSF) in E-Banking directed in United Kingdom, expects to decide the basic issues identified with budgetary segment associations when they build up

organizations on the internet. The overview strategy was utilized by specialists who focus on the budgetary area in the UK. The study demonstrates that Understanding the CSFs in E-banking is vital for senior administration of banking related associations, since it would possibly help them enhance their vital arranging process. The investigation of the study shows two noteworthy sorts of measurable examinations were led, expressive factual examinations and variable examination. In unmistakable examinations, the components (or factors) were positioned altogether of their mean score, the most elevated score being the most vital et cetera. The main six considers request of significance were: easy to use site, frameworks security, bolster from top administration, quick responsive client benefit, advancement of electronic business inside association, and unsurpassed accessibility of administrations and fast conveyance of administrations. Consider investigation, which was done to aggregate together, related factors to reveal components (regarding element examinations), observed the accompanying elements to be basic for the achievement in E-banking. Issues identified with hierarchical adaptability and speed of administration conveyance was observed to be at the highest point of the significance list. Issues identified with authoritative adaptability and speeds of administrations conveyance were observed to be at the highest point of the significance list. Business procedures and frameworks joining and improved client administrations were next in the rundown of significance.

The investigation of Kim&Prabhaka (2010) on the appropriation of electronic banking: hidden purchaser conduct and basic achievement variables led in Estonia, was expected to think about the further comprehension of, how customers see electronic Banking in the prime of intuitive diverts in Estonia, as Estonia is globally eminent for being a pioneer in the acknowledgment of new advancements. A progression of a top to bottom meetings was led with driving industry specialists in Estonia. The determination basis for the respondent was essentially their association with the advancement of Internet Banking frameworks from the beginning of its rise.

The overview directed for this examination tended to six distinct issues affecting the selection of Internet Banking (Better costs, Recommendations, Better administration, Marketing endeavours, Better get to and higher security). The most essential figures beginning to utilize Internet Banking are above all else better access to the administrations (accommodation), better costs and higher security. Better administration (i.e. leaning toward self-benefit over office administration) was additionally of over the normal significance. Two elements that the

respondents did not consider significant to their selection choice were banks' advertising exercises and individual proposals from companions and associates. Likewise the overview directed six primary deterrents (PCs are troublesome, no entrance to internet, internet Banking is costly, low security, have had zero chance to attempt and I lean toward individual contact) in embracing Internet Banking (aftereffects of a preparatory study, 100 respondents), the most vital variables disheartening the utilization of Internet banking are absence of Internet get to and not having an opportunity to experiment with Internet Banking in a sheltered situation. At long last the exploration demonstrates that Banking exercises alone may not be adequate in accomplishing development if general foundation, financial environment and government activities are not strong. The examination directed on recognizing the attitudinal, social and saw behavioural control figures that may impact the reception of Internet Banking by Howcroft (2012) depended on theory of planned behaviour (TPB) and the diffusion of innovations theory (DIT) created by a past research in Singapore. The point of the study was to gather South African information keeping in mind the end goal to try out the theories in regards to the elements, which influence appropriation of Internet Banking and contrast these outcomes and those gathered in different nations. Online poll was utilized to gather exact information and the aftereffects of the study demonstrates that aim to receive Internet Banking can be anticipated by attitudinal variables, saw behavioural control elements to a lesser degree, and not by subjective standards. Every single attitudinal component aside from banking needs is observed to be noteworthy, with intricacy and hazard demonstrating a negative relationship.

### **2.3.3 Technological factors and implementation of E-banking**

The Technology Acceptance Model (TAM) proposes that an imminent client's general emotions or states of mind toward utilizing a given innovation-based framework or technique speak to real determinants in the matter of regardless of whether he/she will at last utilize the framework (Davis, 2009). Lockett and Litter (2007) exhibited an investigation of the appropriation of direct Banking benefits in the UK utilizing a model of the apparent development qualities and the individual attributes of adopters and non-adopters. Their outcomes showed that the most critical saw positive quality of internet Banking was its 24-hour-a-day accessibility, though multifaceted nature and danger of administration were the two negative properties. The fundamental hindrances connected with internet banking, be that as it may, incorporated its multifaceted nature and the security dangers required in utilizing it. The concentrate additionally established that adopters of new innovation by and large earned

higher wages, worked longer hours, moved house all the more much of the time furthermore had more ideal states of mind towards change than non-adopters.

The issue of perceived hazard selection emerges on the grounds that monetary exchanges include hazard, (Humphrey, 2008). This is especially valid on account of internet-based Banking, where the bank and the client are physically isolated, possibilities are hard to anticipate and fuse into terms and conditions, connections are hard to screen, and digital laws are not all around characterized. The increased hazard impressions of clients influence the level of internet Banking reception. At the point when preparing on the internet data, clients may regularly see that there is an abnormal state of hazard despite the fact that the hazard level might be entirely. More experienced online clients have more data about internet-based banking, and subsequently they see the hazard to be less and along these lines have more trust in online exchanges, (Ba, 2011). And again Ba (2011) presumed that when clients feel that an online bank has a poor or terrible notoriety, they would be demoralized from utilizing that internet site. While surveying the notoriety, clients likewise evaluate the creative capacities of the bank, which depends on the clients' desires of the aptitudes and abilities that the bank has in electronic exchanges, (Lee, 2011). Seen chance diminishment demonstrates basic in an indeterminate and hazardous environment and, as pointed out by Krauter&Kaluscha(2008), online exchanges dependably happen in that unsafe environment where obscurity, absence of control and potential advantage are constantly included. Online trust can lessen the levels of saw hazard connected with exchange processes (Pavlou, 2008). In terms of saw security, sites could expand customers online trust by diminishing saw ecological dangers or by raising security (Warrington, 2010). Likewise, customers may uncover their private data to sites when unwavering quality and validity are perceived; this along these lines decreases buyers worries of protection and security and fabricates online trust toward the sites (Mohammad, 2012). Seen hazard can likewise make clients dismiss new innovation-based administration conveyance. Clients are additionally stressed that innovation-based administration conveyance frameworks won't act obviously, and need certainty that issues can be explained rapidly (Warrington, 2010). Yahya (2011) found that exchange chance happens when online markets neglect to guarantee that administration will be conveyed with sufficient quality. Regularly, moderate reaction time after the Internet collaboration prompts to a postponement of administration conveyance and causes clients to be uncertain that the exchange was finished.

### **2.3.4 Strategic factors and implementation of E-banking**

Karjaluoto (2012) demonstrated that banks have the decision to offer their Banking benefits through different electronic conveyance stations innovations, for example, Internet innovation, video banking innovation, phone-banking innovation, and WAP innovation. They likewise showed that Internet innovation is the fundamental electronic dispersion divert in the-banking industry. As it were, e-Banking as a internet based banking that includes the arrangement of Banking administrations, for example, getting to accounts, exchanging stores amongst records, and offering an online monetary administration.

Turban (2013) claims that in the 1990s e-Banking was underutilized as business associations utilized it just to showcase their items and administrations. Rogers (200), analysed client introductions and utilization of monetary appropriation directs in the Australian money related industry, found that all the more as of late most budgetary foundations, confronted with aggressive weight after the presentation of deregulation in 1983, have re-examined their procedures to take full favourable position of IT. Rafiu (2007) opines that the test to extend and keep up banking piece of the pie has impacted many banks to put more in improving utilization of the Internet. The development of e-Banking had made many banks re-evaluate their IT procedures in aggressive markets. This finding recommended that the banks that fail to react to the development of e-banking in the market are probably going to lose clients and that the cost of offering e-banking administrations is not exactly the cost of keeping branch banking.

This idea was likewise affirmed in a study led by Jasimuddin (2010) analysed the part of e-Banking in Saudi Arabia. He demonstrated that the greater part of Saudi banks had exploited Internet innovation to build up sites yet few offered e-banking administrations. He proposed that if the Saudi Arabian banking industry wished to be effective in the worldwide economy it would need to coordinate Internet innovation into its Banking technique. Ayo (2009) explored the possibilities of internet business in light of ability, motivation and opportunities (AMO) model and watched that practically all organizations have online nearness. The paper reported the inspiration and open doors for internet-based business as low in light of absence of e-Payment foundation and access to information and communication technology (ICT) facilities. Additionally, in an exact appraisal of client acknowledgment of internet business did in Germany, Buse(2009) watched that: the most noteworthy versatile clients are best administration, trailed independent from anyone else utilized, salaried class, understudies and



others. Government workers were found not to disparage portable-banking; the most supported explanation behind completing versatile-banking is universality, next is review of ledger, trailed by promptness; and the most noteworthy dread of clients about portable-banking is that of frailty, next is cost, and uncomfortably.

Mahdi (2010) utilized chi-square to decide the effect of e-banking in Iran and their discoveries from the perspectives of clients is that, e-banking cause higher focal points to Iranians. At the end of the day, Iran banks give benefits that the clients are determining fulfilment with specific reference to the utilization of e-banking. In a comparable study, Jayawardhena and Foley (2010) investigate e-banking as another Conveyance channel contending that E-Banking may defeat the inalienable inconvenience of conventional banks; it is obvious that if e-banking led effectively it promotes to huge volume of exchange. Further, Chiemeké (2014) led an observational examination on selection of e-banking in Nigeria. The study distinguished the major hindering components to Internet Banking appropriation in Nigeria, for example, instability, deficient operational offices including media communications offices and power supply, and made suggestions on how Nigeria banks can limit the computerized isolate. Likewise, the report established that Internet banking is being offered at the fundamental level of intuitiveness with the vast majority of the banks having for the most part data destinations and giving little Internet value-based administrations.

Similarly, Agboola (2010) examined electronic instalment frameworks and telebanking administrations in Nigeria. The discoveries established that there has been an extremely unobtrusive move far from money. Instalments are currently being mechanized and total volumes of money exchanges have declined.

The consequence of the study established that tele-banking is fit for expanding the client relationship, hold client's reliability and empower banks to increase ordering tallness of piece of the overall industry if their chaperon issues, for example, inadequacy of broadcast communications administrations, epileptic supply of influence, high cost, dread of deceitful practices and absence of offices vital for their operation were dealt with.

## **2.4 Conceptual Framework**

Researchers have been used different frameworks in the study of adopting new technological innovation. Among frameworks that have been developed in different studies includes,



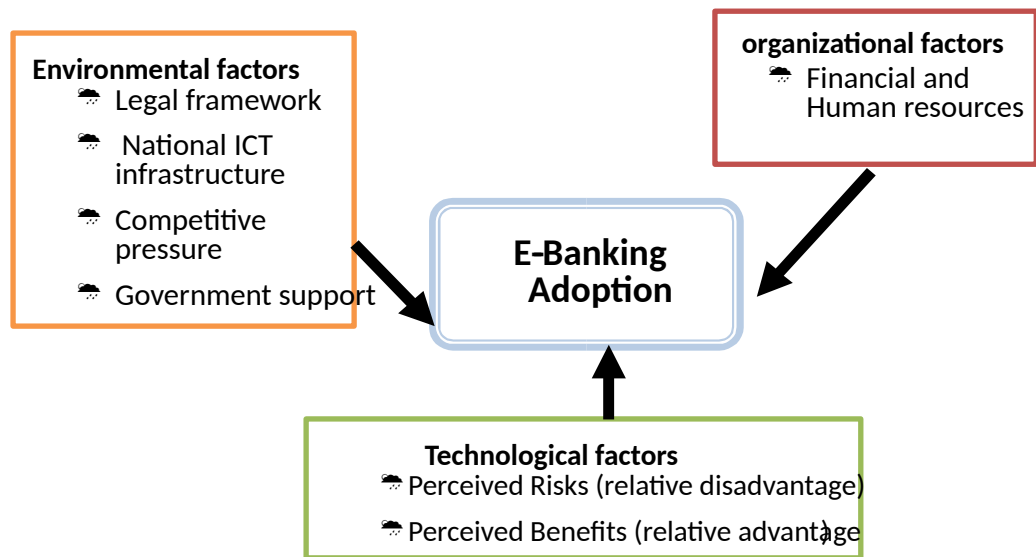
Technology-Organization- Environment (TOE) framework, Technology Acceptance Model (TAM), Theory of Planned Behaviour (TPB).

### **2.4.1 Technology- Organization- Environment 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 (Salwani, et al 2009; Chang et al 2007). According to Tornatzky and Fleischer (1990), technology adoption within an organization is influenced by factors pertaining to the technological context, the organizational context, and the external environment.

Based on this, the researchers adopt the TOE framework to summarize possible key factors affecting E-banking adoption as shown in Figure 2.1. 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 Rogers' 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. For each context, various factors have been identified from the literature but only those that are considered relevant for E-banking adoption are included in the framework. Details of factors considered in this study are discussed below.

**Figure: 2:1. Technology-Organization-Environment framework**



Source: Tornatzky and Fleischer (1990)

### 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 (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.

**Perceived benefits:** - Perceived benefits of E-banking cover both direct and indirect benefits for the banking industry as well as for the consumers. Direct benefits include the savings on operational cost, improved organizational functionality, productivity gain, improved efficiency and increased profitability. Indirect benefits include the opportunity or intangible benefits such as improved customer's satisfaction through improved services, improved banking experience and fulfilment of their changing needs and lifestyle (Kuan&Chau 2001 &Iacovou 1995).

**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 &Laforet 2005). Issues related to security always been a concern when dealing with technologies related to online transactions have such as E-

banking (Chang 2007 & Rogers 2003). Therefore, the perception of the risks regarding E-banking is expected to influence its adoption and further growth.

Previous studies mentioned that perceived risk was a major factor that influences the adoption of electronic banking services (Polatoglu and Ekin, 2001; Tan and Teo, 2000). Featherman MS and Pavlou PA (2003) defined perceived risk as the potentiality of loss in the pursuit of a desired outcome of using electronic services. It increases with the higher level of uncertainty or with an increased chance of negative consequences (Lu, Hsu, and Hsu, 2005). Most of the researchers noted that customers' perceived risk was a kind of multi-dimensional construct, and such dimensions may vary according to the product or service type. Five dimensions of perceived risk have been identified in the previous studies (Featherman MS and Pavlou PA, 2003; Kuisma et al., 2007; Lu et al., 2005; Natarajan et al., 2010). These dimensions are: performance risk, social risk, financial risk, privacy risk and time risk. Performance risk refers to losses incurred deficiencies of electronic services.

Customers are often worried that a break down in the system servers will occur while conducting electronic services, because these situations may result in unexpected losses (Kuisma et al., 2007). Littler and Melanthiou (2006) noted that a break down in the system could reduce customers' willingness to use online banking. Social risk refers to the potential loss of status in one's social group as a result of adopting a product or service (Featherman MS and Pavlou PA, 2003). It is possible that one's social standing may be enhanced or diminished depending on how electronic banking services are viewed. Yang, Park, and Park (2007) found that social risk has a negative impact on attitude for consumers. Financial risk is defined as the potential for monetary loss due to transaction error or bank account misuse. Many customers resist using online banking because they fear from such losses (Kuisma et al., 2007). Privacy risk refers to the potential loss of control over personal information which is used without knowledge or permeation (Featherman MS and Pavlou PA, 2003). Horst et al. (2007) stated that the greatest challenge of the electronic banking sector will be winning the trust of customers over the issue of privacy and security. Finally, time risk refers to the loss of time in implementing, learning how to use and troubleshooting a new electronic service (Natarajan et al., 2010). Consumers are less likely to adopt an electronic service that they consider having high setup and maintenance costs (Featherman MS and Pavlou PA, 2003).

## **Organizational Factors**

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

**Financial and human resources:** Financial resources are an important factor in facilitating innovation adoption for any organization and they are often correlated with the firm size (Kuan 2001 & 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 service.

## **Environmental factors**

Researcher identified factors related to the environmental context that play a crucial role in technology adoption and some factors in this category are arguably more influential than others, especially when countries under study have an authoritative government leadership. The Four factors relevant for E-banking adoptions included in this study 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 & Scupola 2003).

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

**Government Bagozzi 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 & Iacovou 1995).

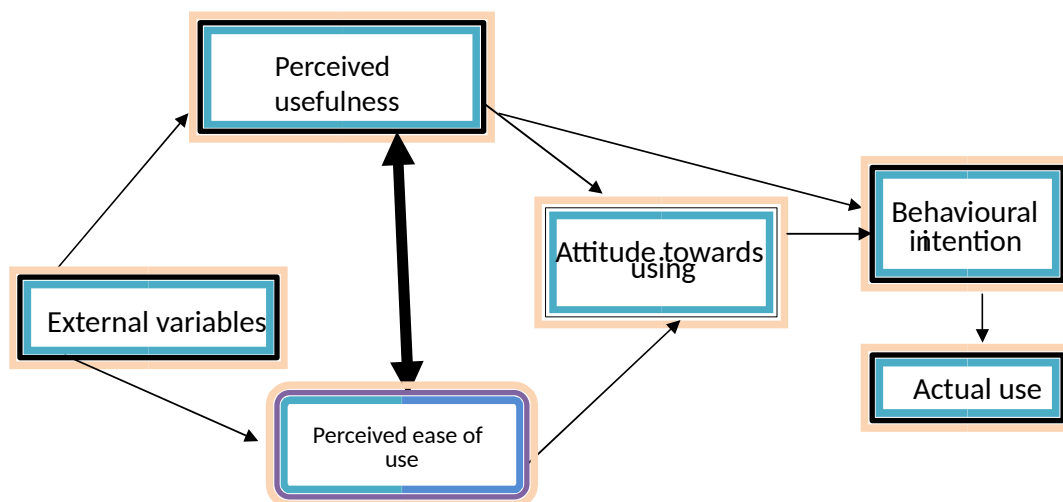
## 2.4.2 Technology Acceptance Model (TAM)

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, , and 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 behavioural 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.

According to TAM, greater perceived usefulness and the perceived ease of use of an information system will positively influence the attitude toward this system. The attitude, in turn leads to a greater intention to use the system, which positively affects one's actual use of the system.

TAM supposes that, other thing being equal, perceived usefulness is influenced by the perceived ease of use because the easier a technology to use, the more useful it can be.

**Figure .2.2. Technology Acceptance Model (TAM)**



Source: Davis (1986)

Perceived usefulness (PU) is defined as the degree to which a person believes that using a particular system would enhance his or her job performance.

Perceived ease of use (PEU) refers to the degree to which a person believes that using the system will be free of effort.

Attitude (ATT) explains a person's favourable or unfavourable assessment regarding the behaviour in question. Intention (INT) is a measure of the strength of a person's willingness to use effort while performing certain behaviour.

The external variables in the model refer to a set of variables that can influence information system adoption indirectly through perceived ease of use and perceived usefulness (Davis et al., 1989).

### **2.4.3 Theory of Planned Behaviour (TPB)**

The theory of planned behaviour (TPB) suggested that human behaviour is determined by intention to perform the behaviour, which is affected jointly by attitude toward behaviour, subjective norm and perceived behavioural control (Ajzen, 1991, 2002).

Attitude (ATT) is the general feeling of people about the desirability or undesirability of a specific behaviour. Subjective norm (SN) expresses the perceived organizational or social pressure of a person who intends to perform a particular behaviour.

Perceived behavioural control (PBC) reflects a person's perception of the ease or difficulty of implementing a particular behaviour.

The ability of TBP in providing a useful theoretical framework for understanding and predicting the acceptance of new information systems is demonstrated (Ajzen, 2002).

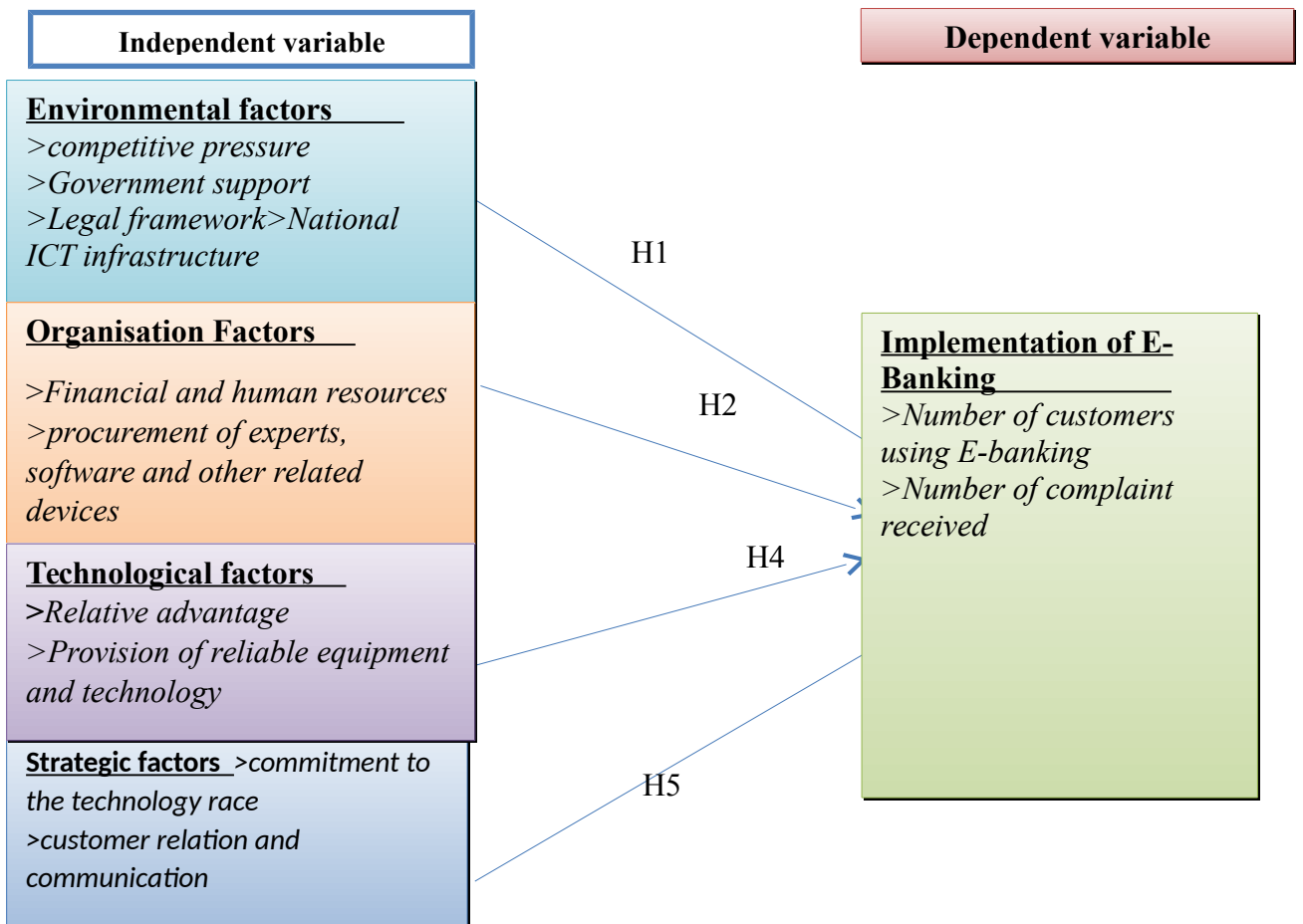
## **2.5 Conceptual Framework of the study**

Many researchers have been used different frame works in the study of adopting new technological innovation including e-banking. Among the frameworks that have been developed based on the past studies include, Technology Organization Environment (TOE), the Technology Acceptance model (TAM) and Theory of planned behaviour (TPB) which were discussed in the literature.

Based on the theoretical review, the researcher reviewed these three different frameworks and empirical reviews on the study area that are hypothesized to effect on the dependent variable

(E-banking adoption). Different variables within these five-frame works were analysed in this study that adoption of e-banking would be affected by these variables either positively or negatively as follows.

Therefore, after careful consideration of all independent variables within the five-frame works and the dependent variable of the study, the following hypotheses are developed to be tested using Analysis of correlation and multiple regressions techniques, which are presented as follows in the following figure: - **Figure 2.3 Conceptual Framework the study**



Source: Tornatzky and Fleischer (1990)

### Environmental Factors

Natural element alludes to the outside environment in which an association works and its condition for supporting the improvement of e-banking administrations.

### Organisation Factors

Hierarchical element alludes to the association's attributes that impact its capacity to embrace and utilization of E-banking framework. E-banking is relied upon to speak to shoppers with

advantages, for example, cost reserve funds, more noteworthy control over administration conveyance, lessened hold up times, higher saw levels of customisation, and advantageous access to administrations without time or space requirements. This utilization of data innovation likewise offers to money related establishments since it can institutionalize benefit conveyance, decrease work and administration costs, extend the alternatives for conveyance, and achieve clients who are inaccessible through different channels.

### **Technological Factors**

The innovative element alludes to adopter's impression of E-banking qualities. Common qualities of innovation considered in innovation incorporate relative points of interest (perceived advantages), and relative weaknesses (perceived dangers).

### **Strategic Factors**

Association considers this study allude to cost of administration arrangement and client connection which are a main consideration in e-banking usage.

## **CHAPTER THREE RESEARCH METHODOLOGY**

### **3.1 Introduction**

This portion describes the methodologies that the researcher is used in this study. it include description of study Area, Research approach, Research design, Target population and sample,



Data source and types, Data collection procedure, Ethical consideration and Data analysis techniques along with an appropriate justification associated.

### **3.2 Study Area**

The area chosen for this study was Addis Ababa because it is the capital city of Ethiopia having better possible opportunities for E-banking and also E-banking experts of the bank are located at head offices and districts.

### **3.3 Research Approach**

In order to attain the objective of the study and answer the research questions, the researcher is implemented mixed research approach. The idea of mixed approach methods is supported by different scholars by mentioning it's advantageous over using a single method. A mixed methods approach is one in which the researcher tends to base knowledge claims on pragmatic grounds (e.g. consequence-oriented, problem-centred, and pluralistic). It employs strategies of inquiry that involve collecting data either simultaneously or sequentially to best understand research problem. The data collection also involves gathering both numeric information (e.g., on instruments) as well as text information (e.g. on interviews), the rationale of using a mixed approach is to gather data that could not be obtained by adopting a single method (Creswell, 2003). Hence, the basis of such approach helps to neutralize the limitations of applying a single approach in connection with the qualitative and quantitative nature of the research questions.

### **3.4 Research Design**

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

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

and the degree in detail of the present situation. John W. Creswell (2003) stated that the descriptive method of research is used to gather information about the present or existing condition.

The study is focused on describing the current problem and answers the research questions which are in the form of what, and to highlight the most important factors that can negatively or positively influence implementation of E-banking in commercial bank of Ethiopia. Moreover, this research aims to explain the phenomenon and assess the current practice of E-banking. Therefore, Descriptive and explanatory research methods were used to achieve the research objectives.

### **3.5.1 Target population**

In research methods, population is the entire aggregation of items from which samples can be drawn (Yahiya, 2011). The population of the present study consists of all Employees in all branches under the Districts of commercial banks of Ethiopia, located in Addis Ababa.

### **3.5.2 Sample Design**

According to Cooper and Schindler (2014), a sampling frame is a list of elements from which a sample is drawn. A sampling frame is the source material from which a sample is drawn. It represents a list of all elements within a population that can be sampled (Zikmund and Babin, 2012). In order to undertake this study, the researcher was purposely took E-payment managers in head office; district and professional experts who in charge of E-payment technology for interview and select employees on different position for quantitative survey. The study focus is on districts located in Addis Ababa and 302 branches under their watch. These districts are CBE East Addis Ababa District which has employees of 2,771, CBE West Addis Ababa District which has employees of 2,671, CBE North Addis Ababa District which has employees of 3,013, and CBE South Addis Ababa District which has employees of 2,781. Total Employees from the four districts are 11,236 (Source: commercial bank of Ethiopia head office, HRM April 2019)

To determine sample size the researcher used Taro Yamane's (1973) sample selection formulas. According to him, for any sample, given the estimated population proportion of 0.05

and 95 % confidence level, the sample size is given by:  $n = \frac{N}{1+N(e)^2}$

Where; n = sample size, N= population, 1 = constant, e = error estimate (0.05%) at 95% confidence interval

The sample frame is computed as follows:

$$n = \frac{N}{1 + N(e)^2} = \frac{11,236}{1 + 11,236(0.05)^2} = 386$$

So, the researcher took 386 samples from employees of commercial bank of Ethiopia, Addis Ababa.

The detail of the Samples was illustrated on the following table,

**Table 3.1: Sample of Head office, Districts and Branch's**

<b>Head office and district office</b>	<b>No. Respondent</b>	<b>Branch</b>	<b>No. Respondent</b>
South Addis Ababa District office	10	Gofasefer	18
		Finfine	17
		Lafto	12
		Mexico	10
		Nifas silk	18
		Temenjayaj	13
		Akaki	10
East Addis Ababa District office	10	Africa avenue	11
		Bole	15
		CMC	13

		Edna mall	12
		Megenagna	16
North Addis Ababa District office	10	Addis ababa	18
		AradaGiorgies	14
		Arat kilo	14
		ChurchilGodana	12
		Gulele	13
		Winget	10
West Addis Ababa District office	10	Abakoran	13
		Ayer Tena	13
		Abinet	13
		Tor Hayloch	15
		Teklehaimanot,	16
		Zenebework	12
Head office	18	328	
Sub Total	58		
Total	386		

### **3.6 Data Sources**

In order to collect sufficient data so as to answer the research questions, In this research primary sources of data were utilized through Questionnaires from the selected employees of the bank.

### **3.7 Data Collection Instruments**

According to Sansoni (2014), a questionnaire is a data collection tool that is designed to collect structured and unique data from respondents. The study was used Questionnaire: close ended questionnaire in a 5-point likert scale was used to collect data from the sample respondents. The questionnaires were containing 5 rating scales ranging from 1- strongly disagree to 5 strongly agree. The questionnaires were structured in such a way that it includes all relevant parts and information to clearly inform the respondents. For the primary data collection 337 close ended Questionnaires were distributed to the selected sample of the Employees of the bank.

### **3.8 Methods of data analysis**

Descriptive and inferential analysis was used. The data entered in to Microsoft excel and raw data set was established following this the raw data was imported to SPSS version 20 and the frequency tables was produced for all response's variables in the data set. Correlation analysis also was conducted to measure whether there is relationship between implementation of e-banking and determinant factors. Regression was carried out to identify the extent to which the determinant factors are affects the implementation of e-banking.

The relationship between the variables is stated using a mathematical function.

$$Y = f(X_1, X_2, X_3, X_4)$$

Where Y is the dependent variable and X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub> and X<sub>4</sub> are the independent variables

Implementation of E-banking by commercial bank of Ethiopia is represented by Y

Therefore, an analytical model of a linear multiple regression equation of the form shown below is developed.

Where:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e_1$$

Y= Implementation of E-banking

$\alpha$  = Autonomous factors

X1= Environmental factors

X2= Organisation factors

X3= Technological factors

X4= Strategic factors

$\beta_1$  = Coefficient for environmental factors

$\beta_2$  = Coefficient for Organisation factors

$\beta_3$  = Coefficient for Technological factors

$\beta_4$ = Coefficient for Strategic factors

e= Error term - Captures all relevant variables not included in the model because they are not observed in the data set

This relapse relationship demonstrated the degree to which every free factor impacts the dependant variable. This appeared by the coefficient of the free factor for every situation.

### **3.9 Validity**

Legitimacy as indicated by Mugenda and Mugenda (2004) is the exactness, importance and the degree at which comes about got from the investigation of information really speak to the phenomena of the study. To achieve validity the researcher was used standardized questionnaire, so, the instrument is already valid and tested. Content validity was further ensured by consistency in administering the questionnaires. All questionnaires would be distributed to subjects by the researcher personally the questions were formulated in simple language for clarity and ease of understanding clear instructions were given to the subjects.

### **3.10 Reliability**

This helped the researcher to amend and come up with dependable instruments and guarantee believability of the outcomes. Unwavering quality needs to demonstrate the degree at which the examination instruments will yield great results Cooper and Schindler (2008). In this study, a reliability test was performed in order to see whether the study was given similar results if the same study is repeated. To ensure reliability of this study, a Cronbach's Alpha

was performed as a measure to see if the study repeats the same results if the same study is performed again. Total numbers of questions in the questionnaire were 36 testing variables.

From the analysis the Cronbach's alpha result found from the data collected from 337 respondents for 36 questions, the overall Cronbach's alpha score is 0.71. The coefficient 0.7 is an acceptable reliability coefficient; since the score is above the standard threshold level the questionnaire was reliable (Dawson, 2007). The values of the reliability analysis were listed on the following Table 3.2.

**Table 3.2: Reliability Statistics**

	Total Cronbach's alpha	0.71	36
--	------------------------	------	----

Source: Own survey and SPSS output, (2019)

### **3.11 Ethical Consideration**

Brief description of the central objectives or purpose of the study was clearly stated in the introductory part of the questionnaires to be filled by the respondents. All information that was collected from the respondents was treated with confidentiality without disclosure of the respondents' identity. Moreover, no information was modified or changed; hence information got was presented as collected and the entire literatures collected for the purpose of this study were appreciated in the reference list.

## **CHAPTER FOUR**

### **Data Presentation, Analysis and Interpretation**

#### **4.1. Introduction**

In this chapter of the research, the data collected from different sources are presented, analysed and interpreted. Accordingly, the chapter deals with the demographic nature of the respondents and analysis and interpretation of the data collected. The analysis of data is processed in line with the basic research questions and objectives of the study. Thus, the chapter has two parts. The first part presents the characteristics of the respondents; the second part presents detailed analysis and discussion of data collected through questionnaire and information obtained from interview with key informants in the sector.

After developing and pretesting the questionnaire, key informants were identified, questionnaires distributed, filled questionnaires collected and in-depth interview conducted. The respondents were from CBE, Addis Ababa.

The data from the filled questionnaires and interview notes were reviewed by reading each record line by line to identify ideas, and categorized to analyse the information gathered from the participants. Specifically, the analysis followed a series of steps that include preparing and organizing the data, having an overall understanding of the data, develop categories and conducting a detailed analysis based on the data.

## 4.2 Rates of Response

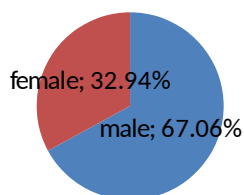
A total of 386 questionnaires were distributed to target respondent. Out of the total 386 questionnaires, 337 questionnaires were obtained which is 87% response rate.

<b>Sample Size</b>	<b>386</b>
<b>Completed and Returned Questionnaires</b>	<b>337</b>
<b>Response Rate</b>	<b>87%</b>

## 4.3. Demographic Characteristics of the Respondents

The first part of the questionnaire consists of demographic information of the participants. This part of the questionnaire requested a limited amount of information related to personal and professional characteristics of the respondents. Accordingly, the following variables about respondents were summarized and described. These variables include: sex, age, occupational position, educational status and year of experience in banking sector.

### classification of sex



**Figure 4.3.1, Classification of sex**

The above figure shows that male respondents were about 67% while females were 33%. This shows that the occupational positions of CBE employees were more occupied by male.

Table 4.2.1 Background of the respondents

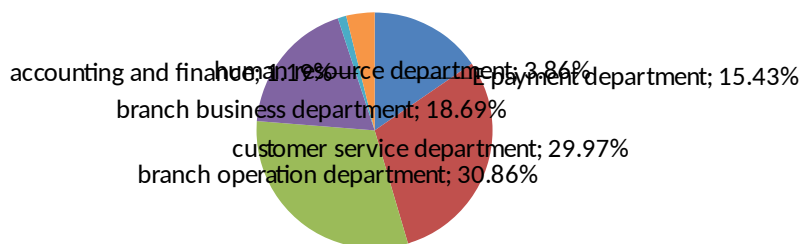


PARAMETERS	CATEGORY	FREQUENCY	PERCENT
Educational Level	Diploma	23	7%
	BA/BSC	259	77%
	MA/MSC	55	16%
	PHD	-	-
	Total	337	100
Age of the respondent	Less than 30 years	157	46%
	31 – 40 years	147	43%
	41– 50 years	23	6.8%
	More than 50 years	10	3%
	Total	337	100
Respondents Experience	below 4 years	16	4.7%
	5 to 10 years	251	74.5%
	11 to 15 years	55	16.3%
	16 and Above	15	4.5%
	Total	337	100%

Analysis of the participants indicated that 7% of the respondents were Diploma holder, 77% of the respondents were Bachelor Degree holders while the rest 16% of the respondents were graduate of Masters. This implies that the academic level of the employee could help the banking sector to make use of the available opportunities.

The data concerning the length of service of the respondents indicates that 16 (4.7%), 251 (74.5%), 55 (16.3%) and 15 (4.5%) have served for below 4 years, 5-10 years, 11-15 years and for more than 16 years respectively. This may reveal that all of them are familiar with the system in place and are able to give reliable information about the current situation.

### Occupational positions



**Figure 4.3.2, Occupational positions**

Various occupational positions were taken in to account in the questionnaire this include 52 (15.4%) E-payment department, 101 (30%) customer service department, 104 (30.9%) branch operation department, 63 (18.7%) branch business department, 4 (1.2%) accounting and finance, and 13 (3.9%) human resource department, this demonstrates that respondents required in the study were drawn from significant divisions in the bank.

## **4.4 Descriptive Statistics**

After collecting, screening, and organizing of the data gathered through questionnaire filled by different employee, the researcher came across the following finding about determinant factors influencing the implementation of Electronic Banking in commercial bank of Ethiopia. The data collected are tabulated in which it shows the frequency/number of respondents and the percentage from the total 337 sample size.

The feedback of the respondents for the variables indicated below were measured on five point Likert scale with measurement value 1= Strongly disagree; i.e. very much dissatisfied with the case described; 2= Disagree, i.e. not satisfied with the case described; 3= Neutral, i.e., uncertain with the case described; 4= Agree, i.e., feeling all right with the case described and considered as satisfy; and 5 =strongly agree, i.e. very much supporting the case described and considered as highly satisfy. To make easy interpretation, the following ranges of values were reassigned to each scale: Less than 2.8 = Disagree, 2.9-3.2 = Neutral, above 3.2 = Agree

### **4.4.1 Organizational Factors that Influence the implementation of E-banking**

The first objective of the study was to examine the influence of organizational factors in the implementation of E- banking in CBE. The respondents were asked to indicate their levels of agreement. The findings are presented in the table 4.4.1 below.

**Table 4.4.1 organizational factors**

	<b>organizational factors</b>		<b>SD</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>SA</b>	<b>MS</b>	<b>SDV</b>	
1	Adopting changes in technology by Board, top Management and staff.	N=337	108		103	74	44	8	2.2	1.1
			32		30	22	13	3		
		%								
2	Modest technical and managerial skills in implementation and development of E-banking technology.	N=337	45		153	99	33	7	2.4	0.9
			13		45	29	9.8	2.1		
		%								
3	Enough financial Capacity to deal with the cost of implementation of E-banking. (such as cost of ICT equipment and network, software and re-organization)	N=337	95		125	85	25	7	2.1	0.9
			28		37	25	7	3		
		%								
4	The bank has enough physical support and equipment for the implementation of E-banking.	N=337	103		116	74	44	-	2.1	1.0
			30		34	22	13	-		
		%								
5	The management gives adequate support for the purchase and maintenance of E-banking equipment's.	N=337	53		124	100	60	-	2.4	0.9
			15		36	29	17	-		
		%								
6	The management perceive the adoption of e-banking as a source of competitive advantage.	N=337	75		142	90	26	4	2.2	0.9
			22		42	26	7	2		
		%								
7	Employees are interested in the use of electronic banking	N=337	109		104	76	43	5	2.2	1.0
			32		30	22	12	2		
		%								
8	The Bank employees are supportive in the use of electronic banking in business Operations.	N=337	44		154	100	33	6	2.4	0.8
			13		45	29	10	2		
		%								
9	Our vision of electronic banking activities is widely communicated and Understood throughout the bank.	N=337	97		127	87	26	-	2.1	0.9
			38		37	15	8	-		
		%								

The above table shows that, 58% of the respondents disagree with the factor modest technical and managerial skills in implementation and development of E-banking technology in CBE. This shows that the absence of reasonable technical and managerial skills in implementation and development of E-banking technology.

The respondent (64%) confirmed that, the bank doesn't have enough physical support and equipment for the implementation of E-banking. On the issue of management perceive the adoption of e-banking as a source of competitive advantage the majority of the respondents disagree.

As shown in item 3, the majority of the respondent disagree that enough financial capacity to deal with the cost of implementation of E-banking. This shows inadequate support for the purchase and maintenance of E-banking equipment's. However, according to the information gathered from interviews, CBE has enough financial capacity to deal with the cost of implementation of E-banking but the managers chooses to priorities other matters other than e-banking.

About 75% of the respondent's revealed that the vision of E-banking activities is not widely communicated and understood throughout the bank. With respect to utilization of E-banking, the study found that employees are not interested in the use of electronic banking. The average mean and standard deviation of the total items which shows the organizational factors that influence the implementation of E-banking represents 2.2 and 0.9 respectively.

In general, the response towards organizational factors in the implementation of E-banking shows that the average mean score for all questions is 2.1 being explained very low. This indicates that the bank executions on the listed organizational factor are implemented inadequately or low.

#### **4.4.2 Environmental Factors that Influence the implementation of E-banking**

In assessing the Environmental Factors that influence the implementation of E-banking, various related issues were presented for the reflection of the respondents. Table 4.4.2 illustrates the reflection of the respondents regarding the Environmental Factors.

**Table 4.4.2 Environmental Factors**

	<b>Environmental Factors</b>		<b>SD</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>SA</b>	<b>MS</b>	<b>SDV</b>
1	The bank monitors and takes action to the e-banking changes and development by local and international Competitors.	N=337	100	111	69	42	15	2.2	1.1
		%	29	33	21	12	5		
2	The bank has influenced competitors on implementation of e-banking	N=337	51	121	96	59	10	2.5	1.0
		%	15	35	28	17	3		
3	The bank adopts e-banking as a result of competitor's implementation.	N=337	106	103	75	44	9	2.2	1.1
		%	31	30	22	13	3		
4	Customer positively influences the bank implementation of E-banking.	N=337	45	152	98	35	7	2.4	0.9
		%	13	45	29	10	3		
5	sufficient government support for E-banking	N=337	93	119	87	28	10	1.9	1.0
		%	37	35	15	8	4		
6	Strong legal framework for E-banking exists.	N=337	103	111	72	41	10	2.2	1.1
		%	30	32	21	12	4		
7	satisfactory network infrastructure and internet related support services	N=337	107	100	75	43	12	2.2	1.1
		%	31	29	22	12	4		
8	Enough customers computer skill and technology literacy	N=337	47	146	98	34	12	1.7	0.7
		%	13	43	29	10	5		

9	Adequate coordination, interaction and cooperation between banks and other decision-making centers in E-banking context	N=337	99	119	86	28	5	2.1	0.9
		%	29	35	25	8	2		
1	Adequate financial networks	Count	107	102	73	45	10	2.2	1.1
		%	31	30	21	13	3		
Valid N								2.1	0.8

Among the 337 respondent 62% of them disagree that CBE monitors and take action to the E-banking changes and development. As shown in the above table CBE doesn't influenced competitors on implementation of e-banking and doesn't adopt e-banking as a result of competitor's implementation. 72% of the respondent indicated that there is insufficient government support for E-banking and 62% disagree with the existence of strong legal framework for E-banking.

The above table shows that there is inadequate financial network that links different banks in E-banking and unsatisfactory network infrastructure and internet related support services. This shows there is deficient telecommunications infrastructure. 57% of the respondent indicated that customers lack computer skill and technology literacy. However, according to the information gathered from interviews, the current network infrastructure is insufficient and the paper work is still waysto link with another bank.

From the findings as indicated in table 4.4.2, the average mean and standard deviation of the total item it represents 2.1 and 0.9 respectively, which shows that environmental factors influence the implementation of E-banking.

In general, from this result the majority of the respondents were strongly disagree with issues presented under environmental factors and accordingly the mean scores of tables 2.2 imply that CBE should monitor and take action regarding environmental factor.

### 4.4.3 Technological Factors that influence the implementation of E-banking

The third objective of the study was to examine the influence of technological factors in the implementation of E- banking in CBE. The respondents were asked to indicate their levels of agreement. The findings are presented in the table 4.4.3 below.

**Table 4.4.3 Technological Factors**

	<b>Technological Factors</b>		<b>SD</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>SA</b>	<b>MS</b>	<b>SDV</b>
1	The bank has various e-banking applications that can be compatible with customers daily business needs.	337	123	143	33	34	7	1.9	0.7
		%	36	42	9	10	2		
2	The bank employees have the necessary technical skills to aid the adoption of e-banking.	337	84	147	73	31	2	2.3	0.9
		%	24	43	21	9.2	0.6		
3	The bank has a good understanding of electronic banking business model.	337	109	121	64	38	5	2.5	1.0
		%	32	35	19	11	1.5		
4	The bank has well-organized electronic banking application support experts.	337	115	163	28	30	1	1.9	0.8
		%	34	48	8	8	0.3		
5	The bank customers trust and prefers the E-banking technology provided by Bank	337	125	121	55	36	-	2.0	0.9
		%	37	35	16	10	-		
6	Highly secured E-banking technology is implemented	337	93	155	62	27	-	2.0	0.8

			27						
		%		46	18	8	-		
7	Relatively advantageous cost of implementing the technology		127					1.9	0.9
		337		116	74	20	-		
			37						
		%		34	22	5	-		
8	The bank Facilitate E-banking products are easy and comfortable to use.		141					1.9	0.9
		337		107	57	32	-		
			41						
		%		31	16	9	-		
Aggregate mean and average standard deviation								2.0	0.8

The above table shows that, 78% of the respondents indicate CBE doesn't have a various e-banking application that can be compatible with customers daily business needs. The respondent (64%) confirmed that, the employee doesn't have the necessary technical skills to aid the adoption of e-banking and (82%) indicate lack of well-organized electronic banking application support experts. However, according to the information gathered from interviews, even if there is a E-banking support team is exists its far to be enough to deliver the necessary support for employees. On this issue of security 73% indicate lack of highly secured E-banking technology implementation, this will result the bank customers not to trust and prefers the E-banking technology provided by the bank. Though, from the information gathered from interviews the majority of customers who's rising such issues are unsecured not because of the technology instead they are unsecured of their on-technology adoption. This indicates CBE need to upgrade banks adequacy, effectiveness and unwavering quality. About 72% of the respondent's revealed that the bank doesn't facilitate E-banking products with easy and comfortable to use.

The average mean and standard deviation of the total items which shows the technological factors that influence the implementation of E-banking represents 2.2 and 0.9 respectively. This implies there is a lack of technological factor for the implementation of E-banking in CBE.S



#### 4.4.4 Strategic factors that influence the implementation of E-banking

The study sought to determine the fourth objective of the study which was to evaluate the influence of strategic factors in the implementation of E-banking in CBE. The findings are presented in the table 4.4.4 below.

**Table 4.4.4 Strategic Factors**

	<b>Strategic Factors</b>		<b>SD</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>SA</b>	<b>MS</b>	<b>SDV</b>
1	The bank Implemented the strategy on which E-banking channels are effective and reliable for customers.	337	121	171	38	7	-	1.7	0.7
		%	35	50	11	4	-		
2	The bank creates modest and continuous awareness and confidence with the security aspects of the E-banking technology.	337	151	125	49	12	-	1.7	0.8
		%	44	37	14	5	-		
3	The Bank maintains a close follow-up to identify customers are satisfied by the E-banking service delivery channels and properties.	337	130	95	63	49	-	2.0	1.0
		%	38	28	18	14	-		
4	E-banking is one of the wining strategies of the bank.	337	99	100	73	65	-	2.3	1.0
		%	29	30	21	19	-		
5	The bank implements efficient, effective and sufficient communication by using different communication channels to enable customers and potential customers about its E-payment products.	337	97	128	68	44	-	2.1	0.9
		%	28	38	20	13	-		
	Valid N							1.9	0.9

As it is clearly illustrated in the table, 81% of the respondent disagree with the item 2, the bank creates modest and continuous awareness and confidence with the security aspects of the

E -banking technology and the bank maintains a close follow-up to identify customers are satisfied by E-banking service delivery channels and properties. 59% of the respondents indicate that CBE doesn't use E-banking as one of the winning strategies of the bank. However, according to the information gathered from interviews, awareness creations about e-banking product and close customer follow-ups are still way far from the track the bank claimed.

The bank doesn't implement efficient, effective and sufficient communication by using different communication channels to enable customers about its E-payment products.

The average mean and standard deviation of the total items which shows the strategic factors that influence the implementation of E-banking represents 1.9 and 0.9 respectively. This implies majority of the respondents are disagreed and there is a lack of strategic factor for the implementation of E-banking in CBE.

#### 4.4.5 Implementation of E-banking

**Table 4.4.5 Implementation of E-banking**

	<b>Implementation of E-banking</b>		<b>SD</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>SA</b>	<b>MS</b>	<b>SDV</b>
1	E- banking makes it easier for customers to do banking activities	337	-	4	63	151	116	4.1	0.7
		%	-	1.2	18.7	45.7	34.4		
2	E-banking increase information access to customers	337	-	-	78	150	109	4.2	0.8
		%	-	-	23.1	44.5	32.3		
3	E-banking gains new segments of customers for the bank	337	-	-	88	143	106	4.4	1.1
		%	-	-	26.1	42.4	31.5		
4	E-banking increased the productivity of bank and economy.	337	-	-	83	147	107	4.0	1.0
		%	-	-	24.6	43.6	31.8		

		4.1	
	Valid N		0.9

It is generally observed that, 80% of the respondents strongly agreed that E- banking makes it easier for customers to do banking activities. The respondents agreed that the basic benefit of E-banking for customers are convince accessibility, ease of use and low cost of using banking activity, providing real time information and getting quality service. Customers can also get banking services without visiting bank office.

77% of the respondents agree that E-banking increase information access to customers by using E-banking system like, ATM, internet banking, mobile banking and others. The largest number of the respondents (73%) agreed that E-banking helps the bank to gain new segments of customers. Banks can get new segment of customers by using different strategy, the basic instrument which helps is introducing new product.

The respondents (75%) are strongly agreed that it maximize productivity for the bank as well as for the economy. E-banking benefits the economy through the reduction of cost of printing cash notes and its related distribution, enhance an aggregate deposit, banking the unbanked, increase the potential of hard currency generation and used as better information control tool, which generally increase speed and efficiency, reliability and accessibility, productivity of the country.

From this result the study concludes that, majority of the respondents were agreed with the benefit of the implementation E-banking. And accordingly, the mean scores of tables 4.1 imply that implementation E- banking makes it easier for customers, banking increase information access and increased the productivity of bank and economy.

#### **4.5 Correlation Analysis**

The correlation between two variables represents the degree to which the variables are associated (covariance). The covariance may be either positive or negative. In specific, Pearson’s coefficient, measures the intensity of the linear association between variables, and may assume values between -1 and 1.

The correlation between dependent and independent variables along with the causal effect was analysed using Statistical Package for Social Science (SPSS). The below correlation matrix

shows correlation between variables in the questionnaire with a Pearson Correlation coefficient to show the strength of relationship among the variables considered in the questionnaire. As per table Below, the coefficient show that all independent variables were positively related with dependent variable (implementation of E- Banking) within the range of, were all are significant at  $p < 0.05$  level.

**Table 4.5.1: Correlation Analysis**

Correlations		ORG	ENV	TECH	STRA	IMP
ORG	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	337				
ENV	Pearson Correlation	.380**	1			
	Sig. (2-tailed)	.000				
	N	337	337			
TECH	Pearson Correlation	.367**	.432**	1		
	Sig. (2-tailed)	.000	.011			
	N	337	337	337		
STRA	Pearson Correlation	.347**	.421**	.374**	1	
	Sig. (2-tailed)	.000	.021	.000		
	N	337	337	337	337	
IMP	Pearson Correlation	.436**	.236**	.386**	.133*	1
	Sig. (2-tailed)	.007	.000	.000	.000	
	N	337	337	337	337	337

**Source: SPSS data (2019)**

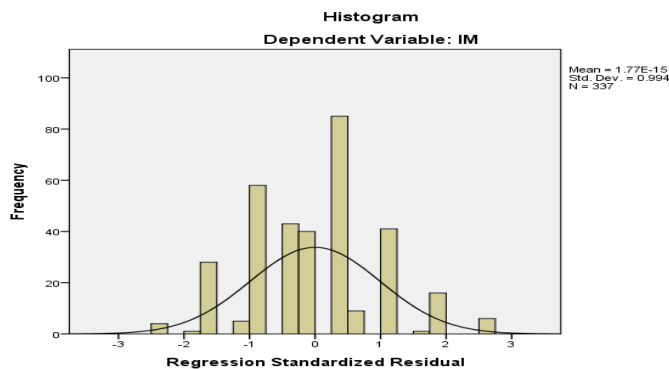
The independent variables, organizational factor, environmental factor, and technological factor shows moderate level of positive relation (0.436\*\* 0.236\*\* and 0.386\*\* respectively). While, one independent variable called strategic factor, show a low and weak positive relation (i.e. 0.133) with implementation of E-banking. The table also shows that the correlation of the independent variables within themselves. While moderate correlation goes between the organizational factor and environmental factor with the value of 0.380, and organizational factor and technological factor with the value of .367 and organizational factor and strategy factor with the value of .376. Highest coefficient of correlation is between environmental factor and technological factor. Hence, there is a significant positive relationship between the two factors ( $r = 0.432$ ,  $n = 337$ ,  $p \leq 0.11$ ).

## 4.6 Normality Test

Normality test is used to determine whether the error term is normally distributed. According to Brooks, (2014), if the residuals are normally distributed, the histogram should be bell-shaped and the Bera–Jarque statistic would not be significant. This means that the p-value given at the bottom of the normality test screen should be bigger than 0.05 to not reject the null of normality at the 5% level. Theoretically, if the test is not significant, then the data are normal, so any value above 0.05 indicates normality. On the other hand, if the test is less than 0.05 which proves significance, then the data are non-normal.

As shown in the histogram below in the figure 4.1 the distribution of the panel observation is symmetric about its mean.

**Figure 4.6.1 Normality Test for Residuals**



**Figure 4.6.1 Normality Test for Residuals**

## 4.7 Multicollinearity

Collinearity is relatively easy to detect by calculating the tolerance or VIF (Variance Inflation Factor). A tolerance of below 0.10 indicates that (multi) Collinearity is a problem. The VIF is just the reciprocal value of the tolerance. Thus, VIF values above ten indicate Collinearity issues (Mooi and Sarstedt, 2011). As shown below on table 4.7 none of the variable's tolerance level is below 0.10 and their VIF above ten. So, there is no a multicollinearity problem with the variables.

**Coefficients<sup>a</sup>**

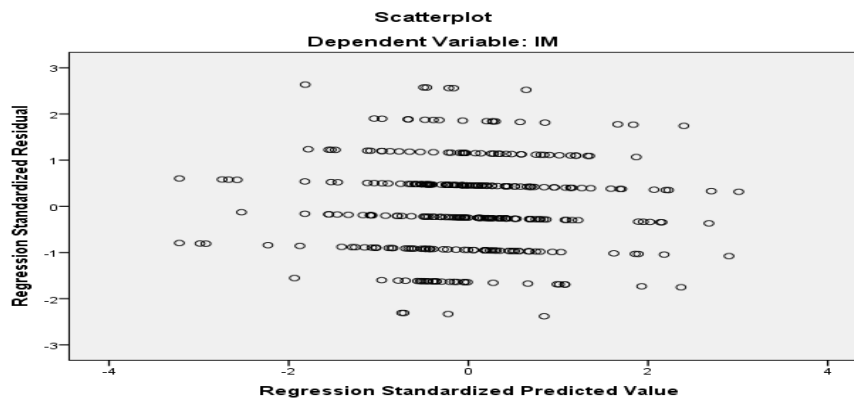
Model	Collinearity Statistics		
	Tolerance	VIF	
1			
	ORG	.885	1.130
	ENV	.898	1.113
	TECH	.987	1.013
	STRA	.994	1.006

**Figure 4.7.1 Multicollinearity Test**

### 4.8 Homoscedasticity

It refers the variance of the errors which should be constant. To test for this, we plot the errors against the dependent variable (Mooi&Sarstedt, 2011). For the dependent variable the plot in Figure 4.8 the errors are constant throughout the observations

**Figure 4. Scatterplot for Homoscedasticity Test (Adoption)**



### 4.9 Regression Analysis

Multiple regression is a flexible method of data analysis that may be appropriate whenever a quantitative variable (the dependent or criterion variable) is to be examined in relationship to any other factors (expressed as independent or predictor variables). Regression analysis was conducted to know by how much the independent variable explains the dependent variable. It

is also used to understand by how much each independent variable explains the dependent variable that is implementation of E-banking.

**Table 4.9.1: Model Summary**

This model summary shows the R squared, the adjusted R squared and the standard error of estimate. R-squared is a statistical measure of how close the data are to the fitted regression line. It is also known as the coefficient of determination, or the coefficient of multiple determinations for multiple regressions.

Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.781a	.731	.728	.33348	2.033

The R-Squared is the proportion of variance in the dependent variable which can be explained by the independent variables. The R-squared in this study was 0.728, which shows that the four independent variables (organization factors, environmental factors, technological factors and strategic factors) can explain 72.8% of the dependent variable. This shows that the other factors not studied in this study explain 27.2 % of the dependent variable (implementation of E-banking).

**Table 4.9.2: Analysis of Variance**

In this ANOVA analysis, the dependent variable is implementation of E-banking. There are significant relationships between the dependent variable and independent variables such as organization factors, environmental factors, technological factors and strategic factors.

ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.045	4	5.011	5.3	.000b
	Residual	39.256	332	.111		
	Total	59.301	336			

The analysis of variance in this study was used to determine whether the model is a good fit for the data. From the findings, the p-value was 0.000 which is less than 0.05 and hence the model is good in predicting how the four independent variables (organization factors, environmental factors, technological factors and strategic factors) influence implementation of E-banking in the-banking industry. Further, the F-calculated (5.3) was more than the F-critical (3.0). This shows that the model was fit in predicting the influence of the independent variables on the dependent variable. When t calculated is greater than t critical, the null hypothesis is rejected.

**Table 4.9.3: Regression Coefficients**

Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.630	0.078		5.431	0.000
ORG	0.670	0.043	0.708	11.364	.005
ENV	0.568	0.063	0.077	5.061	.000
TECH	0.397	0.023	.461	7.414	.000
STRA	0.125	0.110	0.511	30.847	.003

According to above table the standardized coefficients for the four independent variables organization factors, environmental factors, technological factors and strategic factors are (0.670,0.568,0.397,0.125) and their significance levels are .005, .000, .000, .000, .003 respectively which are all less than 0.05. This indicates a significant relationship between the independent variables and the dependent one. The above table shows the coefficient results for the model variables, the t-values of each of the independent variables as well as the significance (p-value).

Based on this Table, the equation for the regression line is:

$$Y = 0.630 + 0.670X_1 + 0.568X_2 + 0.397X_3 + 0.125X_4$$



### **Organizational factor**

From the regression analysis we can see that there is a positive statistical relationship between organizational factor (the independent variable) and implementation of E-banking (the dependent variable). As the table above presents the coefficient of determination (R-squared) indicates the proportionate amount of variation in the response variable explained by the independent variable in the linear regression model. Thus, a unit increase in organizational factor leads to .670 increases in implementation of E-banking other things being constant. Therefore, the more the CBE invests on its organizational factor the more it satisfies its customers.

### **Environmental factor**

From the regression analysis we can see that here is a positive statistical relationship between environmental factor (the independent variable) and implementation of E-banking (the dependent variable). Thus, a unit increase in environmental factor leads to 0.568 increases in implementation of E-banking other things being constant. CBE should enhance environmental factor so that the satisfaction level of its customers increases,

### **Technological Factor**

From the regression analysis we can see that here is a positive statistical relationship between technological Factor (the independent variable) and implementation of E-banking (the dependent variable). Thus, a unit increase in technological Factor leads to .542 increases in implementation of E-banking other things being constant. Therefore, the more the CBE invests on enhancing its technological Factor, the more the customer is satisfied.

### **Strategic Factor**

From the regression analysis we can see that there is a positive and statistically significant relationship between Strategic Factor (the independent variable) and implementation of E-banking (the dependent variable). Thus, a unit increase in Strategic Factor leads to .125 increases in implementation of E-banking other things being constant. Therefore, the more the CBE gives attention to Strategic Factor, the more the customer is satisfied.

### **Hypothesis test**

Hypothesis testing for this study is based on standardized coefficients beta and P-value to test whether the hypotheses are accepted or not.

H1: Organizational factors have a strong influence on the implementation of e-banking. The result of table 4.6.3 shows that standardized coefficient beta and p value of Product strategy was significant (beta=.0.670,  $p<0.05$ ). Therefore, H1 is accepted,

H2: Environmental factors have a strong influence on the implementation of e-banking. The result of table 4.6.3 shows that standardized coefficient beta and p value of Price strategy was significant (beta= .568,  $p<0.05$ ). Therefore, H2 is accepted,

H3: Technological factors have a strong influence on the implementation of e-banking. The result of table 4.6.1 shows that standardized coefficient beta and p value of promotion strategy was significant (beta=.397,  $p<0.05$ ). Therefore, H3 is accepted,

H4: Strategic factors have a strong influence on the implementation of e-banking. The result of table 4.6.1 shows that standardized coefficient beta and p value of place strategy was significant (beta= .0.125,  $p<0.05$ ). Therefore, H4 is accepted.

#### **4.10. Discussion**

E-banking enables CBE to provide internet banking to deliver product/service to customers. It helps customers to view their balances, transfer funds, and pay bills online. CBE also offer mobile banking services through which customers can check their balance and transfer funds by Like restriction (USSD) and other online systems as well as check balances and make account inquires by phone. However, in the viewof the respondents the banklacks modest and continuous awareness and confidence with the security aspects of the E -banking technology and the bank should maintain a close follow-up relationship to identify customers are satisfied by E-banking service delivery channels and properties. According to Delali(2010) consumers' confidence, trust in the traditional payments system has made customers less likely to adopt new technologies and new technologies will not dominate the market until customers are confident that their privacy will be protected and adequate assurance of security is guaranteed and also new technologies also requires the test of time in order to earn the confidence of the people, even if it is easier to use and cheaper than older methods. Additionally, on the respondent perspective CBE doesn't use E-banking as one of the wining strategies of the bank.According to interviewed Informant from E-payment team and respondentsquestioner agreed that CBE lacks of sufficient infrastructure and government support and will affect

customer's willingness to use E-banking technological innovation. This result is consistent with the findings reported earlier by OECD (2004) where government support is one factor that impede e-commerce adoption. As per the response of the sampled participants, lack of legal framework for E-banking technology is considered as a challenge that will have a negative impact on the implementation. Besides, interviews conducted with each E-banking Manager also confirmed that, Ethiopia does not have special rule on the use of E-banking technology or it is not yet included in the banking regulation. Therefore, lack of legal framework for E-banking technology is one challenge for CBE. This result is consistent with the findings reported earlier by Ziad et al., (2009) and Wondwossen and Tsegai (2005). High cost of implementing of E-banking technology such as cost of ICT equipment and network, software and re-organization is the major organizational challenge for implementation and growth of E-banking technology in CBE. This is in line with finding OECD (2004) where high cost of ICT equipment and network, software and re-organization is a factor that hinders adoption of E-banking technology. Similarly, lack of technical and managerial skills in implementation and development of E-banking technology is considered as factor that has a negative influence on the adoption and growth of E-banking technology in CBE. Besides, an interview conducted with E-banking department manager confirmed that E-banking and E-payment system requires high level of understanding and knowledge on ICT, E-banking on one hand and limited knowledge of about E-banking and how they operate by the banks worker on the other hand create a great obstacle for implementation and growth of E-banking technology. The finding is in line with Vaithianathan, S. (2010) where lack of skilled human in E-banking context is considered as hurdles that prevent pervasive e-commerce adoption in developing countries. The respondent also agreed that resistance to changes. According to key informants, unfamiliarity with the service provided through ATM, Internet banking, telephone and mobile phone by customers is a major challenge. On the other hand, lack of social awareness and lack of sufficient skills to use and implement E-banking system were considered as barriers to implement E-banking system. The interview depicts most of the societies in Ethiopia are cash-based society; they do not give value for electronic money to made different transaction like paper or coin money.

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1. Introduction**

The final part of this research paper provides summary of the findings of the study, conclusions and recommendations for the determinant factors influencing the implementation of E-Banking in CBE, which were drawn from the findings and discussions of the data collected by questionnaires and interview. The chapter is structured as follows: Summary, conclusion, recommendations and suggestions for further research.

#### **5.2. Summary of Findings**

Among the selected four determinant factors, all of them i.e. organizational factors, environmental factors, technological factors and strategic factors have a significant effect on the implementation of E-Banking in CBE.

The empirical results from correlation analysis show that;

- Organizational factors ( $r=0.436$ ,  $p<0.01$ ),
- Environmental factors ( $r=0.236$ ,  $p<0.01$ ), and
- Technological factor ( $r=0.386$ ,  $p<0.01$ ) have a moderate, positive and significant correlation with Implementation of E-banking.

- While, Strategy factors ( $r=0.133$ ,  $p<0.01$ ) has Weak and significant correlation with implementation of E-banking.

The multiple regression results revealed the predictor variables;

- Organizational factors ( $\beta = 0.670$ ;  $P<.05$ );
- Environmental factors ( $\beta = 0.568$ ;  $P<.05$ );
- Technological factor and ( $\beta = 0.397$ ;  $P<.05$ ) and
- Strategy factors ( $\beta = 0.125$ ;  $P<.05$ ) had a positive and significant influence on implementation of E-banking.
- The independent variables jointly explained 73% of variance in the determinant factors of execution of E-banking.

### **5.3. Conclusions**

This study aims at investigating the main factors affecting adoption of E-banking in Ethiopia.

To achieve the proposed objective Organization-Environment-Technology-Strategy framework were used. On the other hand both quantitative as well as qualitative (mixed) research approach was employed in the study. Finally, from this study it can be concluded that:

Lack of technical and managerial skills on the use of technological innovation and lack of skills to implement E-banking system are considered as barriers for the adoption of E-banking system. Inadequate support for the purchase and maintenance of E-banking equipment's is also a major challenge for the implementation of E-banking.

Electronic payments are not currently covered in Ethiopian legal system. Lack of such legal framework may thus hinder the introduction of cost effective modern electronic payment instrument such as ATMs, credit and debit cards, mobile/telephone/internet banking. Similarly, Ethiopia does not have special rule on the use of E-banking system or it is not yet included in the banking regulation. Since there is no legal framework on the adoption of technological innovation at central bank, Ethiopian banking industry cannot be enforced to implement E-banking system. So lack of legal framework for the implementation of E-banking system is one basic barrier for E-banking.

Despite the recent improvements made by Ethiopian government on the national infrastructure, the overall ICT infrastructure in Ethiopia remains inadequate or there is a low level of ICT infrastructure.

The study revealed that unfamiliarity with the service provided through ATM, Internet banking, telephone and mobile phone by customers. On the other hand, lack of social awareness and lack of sufficient skills to use and implement E-banking system were considered as barriers to adopt E-banking system in Ethiopia.

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

Lack of competition among local and foreign banks is also another challenge for the adoption of E-banking in the country.

#### **5.4. Recommendations**

Based on the above conclusion, the researcher recommends the following points:

Managers and all staff of CBE should be familiar with concepts, application and advantages of e-banking services and there is a need of boosting bank staff awareness of modern banking technologies through various communication channels (e.g. conferences and workshops).

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

To exploit the benefit of E-banking system, banking industry operated in Ethiopia as well as NBE should have to create awareness for customers to familiarize the service and enjoy the benefit.

Banks should pay special attention to deliver service to customers by using E-banking system, which can easily be accessible, convenience, reliable and which in turn maximize the satisfaction of customers.

CBE need to develop risk reducing strategies that could reduce the customers' concerns about such services. These strategies include the development of the security of E-banking services, protecting personal information, giving unconditional loss guarantees, reducing the possibility of delays of payment and waiting time and providing accessible customer services and educating customers, which might assist in inspiring high confidence in potential customers.

## **5.5. Suggestions for Further Research**

In general, the findings of this study offer additional insights into the current E-banking adoption situation and its implications for E-banking growth in Ethiopia as an example of a developing country. Furthermore, the understanding of the barriers to E-banking adoption identified in this study may help to identify the best course of actions to promote its development. It will also be valuable to all banking industries of the country to increase their awareness and understanding of E-banking benefits but the results of the study are limited to CBE. Conducting a similar study on different banks that perhaps share similar characteristics with CBE would be valuable to match the findings of the study and there are a few studies that have been conducted about E-banking in Ethiopia. The researcher recommends for future researchers to conduct the study by including more variables focusing on customer perspective.

## **REFERENCES**

- Access Capital (2011).Banking Sector Review, investing in Ethiopia.
- Agboola, G. (2010), `E-payment: challenges and opportunities in Nigeria', Economic commission for Africa, Abuja Nigeria.
- Ayo, C.K. (2009), "Information Systems and technologies," McKAY Education series, First Edition, 649p.
- Alagheband, P 2006, Adoption of electronic banking services by Iranian Customers, MATHesis, Lulea University of Technology

Access Capital (2011). Banking Sector Review, investing in Ethiopia.

Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50(2) 179-211.

Ba, D. (2011). "Internet Banking", *Journal of Financial Services Research*, Vol. 22 No.1&2, August, pp. 93-117.

Buse, P. (2009). Changes in the-banking sector: the case of Internet banking in the UK. *Internet Research*, 10(1), 19-31. 37

Bradley, L., & Stewart, K. (2009). A Delphi study of the drivers and inhibitors of Internet banking. *International Journal of Bank Marketing*, 20(6), 250-260.

Brown, J. (2008). Internet banking moves to the mainstream. *Online Financial Innovations*, 48

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

Chiemeke, S. (2014). Consumer acceptance of online-banking: an extension of the technology acceptance model. *Internet Research*, 14(3), 224-235.

Cooper, D. R., & Schindler, P. S. (2011). *Business Research Methods*. 10th Ed. New York, NY: McGraw-Hill education.

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

Dewan, R., and A. Seidmann (2001). *Communications of the ACM*, Current issues in E-banking (Special section), 44(6): 31-57.

Davis, F & Warshaw, P (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models, *Management Science* 35(8): 982- 994.

Davis, H., Bagozzi, G. & Warshaw, E (2009). The adoption of E-banking by Lebanese banks: success and critical factors, research paper, University du Quebec a Montreal

Daghfous, M (2009). 'Adoption of Internet banking by Australian consumers: an empirical investigation'. *Trends in South African Internet banking; Aslib Proceedings*, New Information Perspectives, 56(3), 187-196.

Furst, K & Nolle, D. (2002). Internet banking: developments and prospects", working the financial services authority (FSA) <http://www.fsa.gov.uk>. E-Banking risks, retrieved on august 2010. Paper from office of the comptroller of the currency, administration of National banks.

Featherman MS and Pavlou PA. (2003). Predicting e-services adoption perceived *International Journal of Human- Computer Studies*, 59(4), 51-74.

Mohammad o. Al-smadi. (2012). Factors Affecting Adoption of Electronic Banking. *International Journal of Business and Social Science*, Vol. 3, pp.294-309.



Gupta, P. K. (2008). Internet banking in India: consumer concern and bank strategies. *Global journal of business research*, 2, 43-51.

Gardachew, I. (2010). Perceived Behavioural Control, Self-Efficacy, Locus of Control, and the Theory of Planned Behaviour. *Journal of applied social psychology*, 32(4), 665-683.

Gardachew, W (2010). Electronic -banking in Ethiopia: practices, opportunities and Challenges, *Journal of internet Banking and commerce*, 2nd edition. Sage publication, California.

Howcroft, D. (2012). "Who offers Internet Banking?" *Quarterly Journal*, Office of the Comptroller of the Currency, Vol. 19 No. 2, June, pp. 27-46.

Humphrey, K. (2008). Internet banking: Developments and Prospects, Working Paper, Center for Information Policy Research, Harvard University, April. 39

Jassimuddin, S.(2010). Towards modeling the effects of national culture on IT implementation and acceptance. *Journal of Information Technology*, 16(3), 145-158.

Jayawardhena, C. & Foley, P.(2000). Changes in the banking sector the case of internet banking in the UK. *Internet Research: Electronic Networking Applications and Policy*, Vol. 10 No. 1, pp. 19-30.

Jayawardhena, F.(2010). Perceived usefulness, perceived ease of use and user acceptance of information technology. *MIS quarterly*, 13(3), 319-340.

John W. Creswell (2003). *Research Design Qualitative, Quantitative and mixed methods approach*, 2nd edition, prentice Hall.

Kim, J. & Prabhakar, N.(2010). Internet Banking in the US, Japan and Europe, *Multinational Business Rev* 7381.

Karjaluo, D. (2012). Internet Banking: Developments and Prospect, Economic and Policy Analysis, Working Paper No. 2000-9, Office of Comptroller of the Currency, September.

Kamrul, H 2009, *E-Banking in Bangladesh: The Future of Banking*, School of Business Studies, MA thesis, State University of Bangladesh.

Krauter, J. & Kaluscha, A. (2008). "Determinants of Islamic Banking Profitability", Paper presented at the Economic Research Forum (ERF) 10th Annual Conference, Marrakesh- Morocco, pp16-18 December.

Mayer, C. (2008). "Do Internet Activities Add Value? The Italian Bank Experience", Working Paper, Berkley Research Center, New York University.

Mahdi. R. (2010). A meta-analysis of the technology acceptance model. *Information and Management*, 43(6), 740-755.

Malak, J 2007, Readiness of the Palestinian banking sector in adopting the electronic banking system: exploratory study, MA thesis, The Islamic University of Palestine.

Mugenda, O. (2009). Research methods: Quantitative and Qualitative approaches

Mugenda, O. & Mugenda, A. (2004). Research Methods: Quantitative and Qualitative approaches. Nairobi, Acts Press.

Mwania, M., & Muganda, N. (2011). An investigation on the relationship between information technology (IT) conceptualization and bank performance. School of Computer Science & Information Technology, Kimathi University College of Technology, Kenya, AIBUMA Conference paper, 2011.

Ojokuku R.M. and Sajuyigbe A.S., 2012, The Impact of Electronic Banking on Human Resource Performance in the Nigerian Banking Industry, International journal of Economic Development Research and Investment, vol. 3, No. 2.

Okoye, Victor. 2013 E Banking in Nigerian Banking Industry: Challenges and Prospects International Journal for Management Science and Technology (IJMST) Vol. 1; Issue 6 ISSN: 2320-8848(O.)/2321-0362(P.)

Organization for Economic Cooperation and Development (OECD, 2001). Electronic finance: Economics and Institutional Factors, occasional paper No 2, financial affairs division, OECD, Paris.

Pavlou, M. (2008). "Is the Internet Delivery Channel Changing Banks" Performance? The Case of Spanish Banks", Banco de Espana, Unpublished Manuscript

Porter, M. (1980). Competitive strategy: techniques for analyzing industries and competitors: with a new introduction. Free Press, New York.

Rafiu, P. (2007). The importance of trust in electronic commerce internet research electronic networking application and policy 8(4) 313-21

Rogers, M (2003). Diffusion of Innovations, 5th edition, New York: Free Press.

Salwani, E. (2009), E-commerce usage and business performance in the Malaysian tourism sector: empirical analysis, Information Management & Computer Security. 17(2):166-185.

Sohail, S. (2010). Acceptance of internet banking among adult customers in India Journal of internet banking and commerce, 15(2), 1-16.

Sathye, M. (2009). 'Adoption of Internet banking by Australian consumers: an empirical investigation'. International Journal of Information Management, 27(5), 336-351.

Smith, P.R., & Chaffey, D. (2005). E-Marketing excellence: at the heart of e-Business. Butterworth Heinemann, Oxford, UK. 2nd edition.

Sumanject, S. ,2009, Emergence of payment system in the age of Electronic Commerce:The State of Art, Global Journal of Business Research, Vol. 2, No. 2, pp. 17-36.

Turban, J. (2013). Virtual classroom characteristics and student satisfaction with internet-based MBA courses. *Journal of Management Education*, 24(1), 32-54.

Tornatzky, G & Fleischer, M (1990). *The Process of Technology Innovation*, Lexington, MA, Lexington book.

United Nations Conference on Trade and Development (UNCTAD) (2002). *E-Commerce and Development Report 2000*, New York & Geneva: United Nations.

Wondwossen, T and Tsegai, (2005), *E-payment: challenges and opportunities in Ethiopia*, Economic commission for Africa, Addis Ababa, Ethiopia.

Warrington, T. (2010). CARTA & Caribbean Group of Banking Supervisors. IT Workshop for Regional Bank Examiners. June 23-25, 2009. Georgetown, Guyana.

Yang, Y, 1997, the security of electronic banking, a research paper presented at the national formation systems security conference U.S.A.

Yahiya, A. (2011). Online-banking: a field study of drivers, development challenges, and expectations. *International Journal of Information Management*, 21(3), 213-225.

Yang, J.F., (2006). The effect of use of Electronic Stock Market trading on Customer Attitudes and Behaviours: An Empirical Investigation. *International Journal of Management*, 23(3).

Zhao, et al., 2008, Perceived risk and Chinese consumers' internet banking Service Adoption. *International Journal of Bank Marketing*, 26(7):505-525.

**APPENDIX A: QUESTIONNAIRE**  
**ST. MARY'S UNIVERSITY**

**SCHOOL OF GRADUATE STUDIES**

**DEPARTMENT OF MARKETING MANAGEMENT**

**Questionnaire for determinant factors influencing the implementation of Electronic Banking in commercial bank of Ethiopian**

Dear respondent,

I am NathnaelTeshome, Student in the Department of marketing in St'merys University. I am undertaking a research on the topic determinant factors influencing the implementation of Electronic Banking in commercial bank of Ethiopian, for the partial fulfilment of the requirements of the degree of Master of Marketing management. The aim of this questionnaire is to identify the determinant factor influencing the implementation of Electronic Banking in commercial bank of Ethiopian.

I sincerely assure you that the information you provide will be used only for academic purposes. Your involvement is regarded as a great input to the quality of the research results. Your honest and thoughtful response is invaluable.

Please put the tick mark (√) on the appropriate space as per your choice for each closed-ended question and the appropriate reason for open-ended questions.

Thank You!

## Part I: Demographic information of respondents

### 1.1 Respondents Profile

#### 1. Gender

1. Male  2. Female

#### 2. Age

1. Less than 30 years  2. 31 – 40 years   
3. 41– 50 years  4. More than 50 years

#### 3. level of formal education completed

1. Diploma  2. Bachelor's degree   
3. Postgraduate diploma  4. Master's Degree   
5. Doctorate

#### 4. State the department you are positioned in the bank

1. E-payment department   
2. Customer service department   
3. Branch Operation department   
4. Branch business department   
5. Accounting and finance   
6. Human resource department

#### 5. Years of service in the bank?

1. below 4 years  2. 5-10 years   
3. 11-15 years  4. 15-Above

## Part II. Questions regarding to factors influencing E-banking implementation

Below are lists of questioners relating to implementation of E-banking. Please indicate whether you agree or disagree with each statement by ticking (√) on the spaces that specify your choice from the options that range from strongly agree to strongly disagree.

**Key**

SA=strongly Disagree (1) A= Disagree (2) N= Neutral (3) D= agree (4) SD= strongly agree (5)

S/No	determinant factors	1	2	3	4	5
<b>1</b>	<b>Organization Factors</b>					
1.1	Adopting changes in technology by Board, top Management and staff.					
1.2	Modest technical and managerial skills in implementation and development of E-banking technology.					
1.3	Enough financial Capacity to deal with the cost of implementation of E-banking. (such as cost of ICT equipment and network, software and re- organization)					
1.4	The bank has enough physical support and equipment for the implementation of E-banking.					
1.5	The management gives adequate support for the purchase and maintenance of E-banking equipment's.					
1.6	The management perceive the adoption of e-banking as a source of competitive advantage.					
1.7	Employees are interested in the use of electronic banking					
1.8	The Bank employees are supportive of the use of electronic banking in business Operations.					
1.9	Our vision of electronic banking activities is widely communicated and Understood throughout the bank.					
<b>2</b>	<b>Environmental Factors</b>					

2.1	The bank monitors and take action to the e-banking changes and development by local and international Competitors.					
2.2	The bank has influenced competitors on implementation of e-banking					
2.3	The bank adopts e-banking as a result of competitor's implementation.					
2.4	Customer positively influence the bank implementation of E-banking					
2.5	sufficient government support for E-banking					
2.6	Strong legal framework for E-banking exist					
2.7	satisfactory network infrastructure and internet related support services					
2.8	Enough customers computer skill and technology literacy					
2.9	Adequate coordination, interaction and cooperation between banks and other decision-making centers in E-banking context					
2.10	Adequate financial networks that links different banks in E-banking context					
<b>3.</b>	<b>Technological Factors</b>					
3.1	The bank has various e-banking applications that can be compatible with customers daily business needs.					
<b>3.2</b>	The bank employees have the necessary technical skills to aid the adoption of e-banking.					
3.3	The bank has a good understanding of electronic banking business model.					
3.4	The bank has well-organized electronic banking application support experts.					
3.5	The bank customers trust and prefers the E-banking technology provided by Bank					
3.6	Highly secured E-banking technology is implemented					
3.7	Relatively advantageous cost of implementing the technology					
3.8	The bank Facilitate E-banking products are easy and comfortable to					

	use.					
<b>4</b>	<b>Strategic Factors</b>					
4.1	The bank Implemented the strategy on which E-banking channels are effective and reliable for customers.					
4.2	The bank creates modest and continuous awareness and confidence with the security aspects of the E-banking technology.					
4.3	The Bank maintain a close follow-up to identify customers are satisfied by the E-banking service delivery channels and properties.					
4.4	E-banking is one of the wining strategies of the bank					
4.5	The bank implements efficient, effective and sufficient communication by using different communication channels to enable customers and potential customers about its E-payment products.					
<b>5.</b>	<b>Implementation of E-banking</b>					
5.1	E- banking makes it easier for customers to do banking activities.					
5.2	E-banking increase information access to customers.					
5.3	E-banking gains new segments of customers for the bank.					
5.4	E-banking increased the productivity of bank and economy.					

1. Please kindly state any other Barriers or challenges that the Banks faces in the implementation of E-banking in commercial banking Ethiopia.

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2. If you mention Barriers on the above question, please indicate that what measures should be taken to reduce these challenges?

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3. Please kindly state the opportunities in the country that initiates the adoption of E-banking?

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4. What ways do you think that E-banking can be enhanced in Ethiopia Bank of Ethiopia?

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5. Any suggestions regarding the implementation of E-banking service in commercial bank of Ethiopia?

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**Thank You!**

**APPENDICES B: Structured Interview questioners for CBE (For experts and managers)**

Dear Sir/Madam,

First of all, I would like to forward my heartfelt gratitude for administering this questionnaire honestly and responsibly. The questionnaire is designed to collect the necessary information to undertake a research on the topic “factors affecting customers on the adoption of e-banking of Commercial bank of Ethiopia, Addis Ababa” for the partial fulfilment of the requirements of the degree of Masters of Business Administration. Therefore, please give genuine, frank and timely responses for the questions as follows:

Note: all the information you provide in this Questionnaire will be strictly confidential and will exclusively be used for academic research purpose.

**Thank you very much in advance for your cooperation!**

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

- What are the basic challenges of adopting and developing new technological innovations like ATM, internet banking and mobile banking in your institution?
- What are the benefits your bank gained from the adoption and development of E- banking system (ATM, POS and mobile banking system) in the delivery of service to customers?
- What are the key factors that push your bank to adopt E-banking system?
- What are the existing opportunities in the country that initiates the adoption and development of E-banking technology?
- Is there any legal frameworks at central bank to enforce banking industries to use E-banking technology, such as ATM/debit card, telephone/mobile banking/internet banking?
- Is there any special rule that guide banking industries in implementation of E-banking system? (only for NBE)
- What sort of support would you expect from the government in relation to the E-banking improvement in Ethiopia?