ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

CHALLENGES AND OPPORTUNITIES OF ELECTRONIC BANKING IN ETHIOPIAN BANKING INDUSTRY: THE CASE OF CBE NIFAS SILK DISTRICT

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A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY, SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION

BY

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DECLARATION

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

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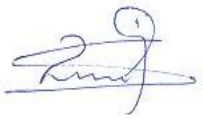
ENDORSEMENT

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 Signature & Date

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Contents

List of Tables

Acronyms and Abbrevations

CBE - Commercial Bank of Ethiopia

E-Banking - Electronic Banking

E-Commerce - Electonic Commerce

E-Payment - Electronic Payment

EFT - Electronic Fund Transfer

FSA - Financial Service Authority

ICT - Information Communication Technology

IDT - Inovation Diffusion Theory

IT - Information Technology

MB - Mobile Banking

OECD - Organization for Economic Cooperation and Developmet

PC - Personal Computer

POS - Point of Sales

PIN - Personal Identification Number

RTGS - Real Time Gross Settlement System

SME - Small and Medium Enterprises

SPSS - Statistical Package for Social Science

TAM - Technology Acceptance Model

TOE - Technology Organization Environment Framework

TPB - Theory of Planned Behaviour

TRA - Theory of Reasoned Action

TV - Television

UNCTAD - United Nations Conference on Trade and Development

VISA - Visa International Service Association

7x24 - 7 Days and 24 Hours

ETB – Ethiopian Birr

Abstract

The study evaluates the adoption and development of challenges and opportunities of electronic banking technology in Commercial Bank of Ethiopia. From 74 city branches of CBE which are located within Nifas Silk Addis Ababa city ten branches were selected. To select these branches, systematic random sampling methlod was employed to draw the samples from the total population of the study. Mixed research approach was used to answer the research questions that emerge through the review of related literature in respect of the E-Banking system in Ethiopia. The study was statistically analyzed by using data's obtained from the survey questionnaire. To analyze data the study used descriptive statistics method. Result of the study indicated that recently the E-Banking practice is growing rapidly and CBE is also trying to support such activity by introducing different payment infrastructure including service called Cardless banking. The main challenges were organizational, and environmental factors. The study also identified service and operational benefits that CBE realized by adopting and extending of electronic banking. Additionally there are internal and external motives that initiates CBE to adopt and develop E-banking technology. Internal motives were such as reducing transaction costs, improving customer service, improving organizational performance, and enhancing relationship with customers and external motives were such as covering wide geographical area, existence of high competition, and existence of legal frame works. The study also indicated existing opportunities for electronic banking adoption and growth such as rapid growth of mobile user, improvement in the banking habit of the society, late adoption of electronic-banking system, commitment of the government to facilitate the expansion of ICT infrastructure and commitment of the government to strengthen the banking industry. The study recommended CBE to facilitate proper and continuous training for its employees, increasing security for electronic-banking products, create deep customer awareness to the community while the government should support the Commercial Bank of Ethiopia by facilitating sufficient ICT infrastructure development and issue clear and workable legal frameworks for the adoption and growth electronic-banking technology.

Keywords: E-banking, Adoption and development of E-banking technology, Challenges, Opportunities

CHAPTER ONE

1. INTRODUCTION

1.1.Background of the study

Now a days, the rapid boom of information communication era (ICT) allows banking industries to renders present day provider to customers. In Ethiopia there are some of personal owned banks and an unmarried state owned bank apart from development bank of Ethiopia and it isn't extraordinary issue to pay attention about E-banking in their promoting for the reason that each banks begin at least one E-banking products like ATM, mobile banking, internet banking etc and with the aid of its nature the service rendered by way of any bank, whether or not it is non-public owned or state owned, is identical what make differ is how they render the carrier, the exceptional of service delivered, customer satisfaction, the manner the banks deal with their customer request and complains, early and late adoption of new banking generation and many others (Getinet, 2018).

Technology advancement in all spheres of human endeavor has tremendously witnessed in 21st century. The increasing advancement in information and communication technology has transformed the landscape of any business in the present world while this change is not unique in banking also. Banking industry is now operating in a complex and competitive environment characterized by these changing conditions and unpredictable economic climate and information communication technology (ICT) is at the center of this global change curve(Ekwueme, C.M, Egbunike, P.A, Amara Okoye, 2012).

E-banking can be simply defined to mean a process where banks create a platform for its customers to generally access information and to transact businesses electronically through an electronic device without necessarily being present at the bank (Annin et al., 2013). Electronic banking enhances the development of the financial system in general and the banking industry in particular, and it is considered as a strategic weapon for banks to cop up with today's stiff competition (Al-Smadi, 2012). Although it provides various benefits for both banks and customers, low level of customers' adoption of electronic banking services is noted in Ethiopia (Garedachew, 2010). However, electronic banking services cannot achieve expected benefits if it is not adopted or used by banking customers (Venkatesh et al., 2003).

Just like other businesses, banks are also turning to information technology (electronic-banking) to improve business efficiency, service quality and attract potential customers (Ndlov and Sigola, 2013). Electronic banking has many advantages interesting diversities including more number of customers, high quality service, lower price, preservation and enhancement of share in the market, unlimited space for market, concentration in new distribution, making competition between commercial brands, concentration on expenses and improvement on revenue, improvement in management system, decreasing expense contractions, close intra banking connection, controlling ecological pollution, etc. (Farshad Havasil et al., 2013).

Electronic-banking systems need a reliable legal system, well-built communication network and strong government support. Since there can be many potential problems or limitations related with electronic-banking, it is necessary to develop a sound atmosphere like strengthening the construction of network infrastructure, improve risk mitigation systems, develop skilled manpower, formulate suitable legal and regulatory frameworks and communicate with government for policy support (Zheng et al., 2009).

Electronic-banking heavily relies on information and telecommunication technology (ICT) to achieve its promise for 24 hours a day and 7 days week availability, lower rates of error and quicker delivery of financial services. Initially, electronic-banking is limited to phone banking operations and remote banking. But, because of technological advancement online banking is widely used coinciding with the spread of high speed broadband connections and the increasing maturation of internet using people (Daniela and Simona, 2014).

Most banks in developed and developing countries are now offering electronic banking system. In the case of developed countries electronic-banking is widely used and in developing countries it is rapidly expanding. This rapid growing of information and communication technology (ICT) is knocking the front door of every bank in everywhere, in which Ethiopian banks also never be an exceptional.

In Ethiopia electronic banking are at an infant stage. Even though, electronic-banking are rapidly expanding in developing and developed world, Ethiopia’s financial sector remain behind in expanding the use of the service. Certainly, the banking service is not well developed with a growing number of international trades; increase the demand of customers and international relations. The today"s banking system has a problem of offering efficient and dependable

services. The banking industry in Ethiopia is embarking on capacity building preparations and modernize the banking system by employing the state of the art technology being used everywhere in the world. Now a days, Commercial Bank of Ethiopia and other private commercial banks are also implementing different kinds of electronic-banking services such as internet banking, mobile banking, automated teller machine (ATM), point of sale (POS) terminal (Garedachew, 2010).

By considering that the Ethiopian banking system is underdeveloped compared to the rest of the world, there is an immediate need to embark on capacity building arrangements and modernize the banking system by employing the state of art of technology being used in anywhere in the world. With the growing number of import-export business, and increasing international trades and international relations, the current banking system is short of providing efficient and dependable services. Cash is still the medium of exchange. The use of checks is mostly limited to governmental institutions, non-governmental organizations and some private businesses. As a result, the country has not yet realized the full benefit of technological advances in electronic banking system (Garedachew, 2010).

This study is conducted with the purpose of analyzing the opportunities and challenges of electronic banking system in Commercial Bank of Ethiopia founds at Addis Ababa city Nifas Silk district. It was conducted based on data mainly collected from staff of the bank through questionnaires. The study identified benefits of electronic banking that a customer gets as a result of using e-banking services as well as the benefits the bank gets as a result of providing e-banking services.

1.2. Background of the organization

1.2.1. Establishment

Commercial Bank of Ethiopia (CBE) is one of the oldest public banks established in 1942 as a State Bank. Since then, CBE has gone through different reforms and mergers coming out as one of the most reputable and biggest commercial banks in the country. It has more than 22 million account holders in its 1500 plus branches stretching throughout the country. Its outreach to individual depositors, small and medium scale businesses and private and public mega investment projects has made it the largest single bank in the country to have a significant impact

on the economy of the country. CBE played a significant role as both the engine of the country's economic growth and mobilizing savings for further investment. In its effort in being part of the solution for the environmental degradation and its subsequent impact on individual citizens and businesses, CBE has the capacity to reach out to millions in both increasing awareness and building adaptive capacity through providing environmentally friendly credit lines. Furthermore, as a responsible corporate institute, CBE has the mandate to formulate Environmental and Social internal policies that reflect the current local and global climate change realities and its subsequent impacts particularly on its business customers and partners throughout the country. CBE strongly believes and understands that there is an impact on communities and the environment due its business activities which in turn will have a significant risk on its credit lines and the overall economic growth of the country. There need to be a comprehensive policy and guidelines that incorporates the bank's direct and indirect activities which creates impact on economies, communities and the environment in which it operates. There is also a common consensus among the executive management, if these impacts are not timely addressed in a systematic and comprehensive way, there could be a significant question on the sustainability of the bank's finance and reputation not to mention its contribution to the economic growth of the country. Therefore, this Environmental and Social Policy is stipulated in anticipation of the current Environmental and Social risks while contributing its fair share towards the national agenda of building the resilient capacity of the climate change victim communities, businesses and projects. Furthermore, CBE as a giant commercial bank in the country would like to be a pioneer and role model for other public and private institutions in creating awareness of its internal activities and reducing its environmental carbon footprints. The stipulated Environmental and Social Policy will be fundamental component of CBE's Environmental and Social Management System (ESMS), which will be led by pool of experts after it gets approval by the board of the bank. The framework of ESMS will incorporate the specific Environmental and Social policy and it'll also sets the pace for suitable procedures and work.

1.2.2. Vision

To become world class commercial bank with reduced environmental footprint, leading by example in 2025.

1.2.3. Mission

We are committed to best realize stakeholders' needs without compromising the well being of our environment and society through Enhanced financial intermediation globally, supporting national development priorities, deploying highly motivated, skilled and disciplined employees as well as state-of-the-art technology. We strongly believe that winning the public confidence and developing sustainable business model are the basis of our success.

1.2.4. Values

Core values are the CBE internal conduct and relationship with customers, partners, and shareholders. CBEs everyday work and approach to business are guided by five company core values: leadership, integrity, respect, innovation & continuous improvement.

1.3.Statement of the Problem

Electronic-banking system is most widely used in developed nations and is rapidly expanding in developing nations. Even if this is the case, cash is the most dominant medium of exchange in our country Ethiopia. Electronic-banking services are at infant stage; even though electronic-banking is rapidly expanding in developed and developing world, Ethiopia's financial sector remain behind in expanding the use of service. The banking industry is not well developed with the growing number of international trades; increase the demand of customers and international relations. The banking system is not offering efficient and dependable service (Gardachew, 2010).

In this era of globalization, with increased competition around the globe in all sectors, a strong banking industry is important in every country and can have a significant effect in supporting economic development through efficient financial services; as a result many banks in the world are modifying their strategies to reach customers worldwide more easily and cheaply. Therefore, banks are developing the technologies that will help them deliver banking products and services by the most cost-effective channels and one of such channel is adoption of Ebanking or internet banking (Ayana, 2012).

E-banking is a way to keep existing customers and attract new ones to the bank. The transaction costs of providing these services are lower than the traditional approach. The rapidly growing information and communication technology is knocking the front door of every organization in the world (Booz & Hamilton, 1997).

In this era of globalization, with increased competition around the globe in all sectors, a strong banking industry is important in every country and can have a significant effect in supporting economic development through efficient financial services; as a result many banks in the world are modifying their strategies to reach customers worldwide more easily and cheaply. Therefore, banks are developing the technologies that will help them deliver banking products and services by the most cost-effective channels and one of such channel is adoption of E-banking or internet banking. E-banking is a way to keep existing customers and attract new ones to the bank. The transaction costs of providing these services are lower than the traditional approach. The rapidly growing information and communication technology is knocking the front door of every organization in the world (Booz & Hamilton, 1997).

The introduction of electronic banking in to the banking sector is to bring extra opportunities to the customers there by to enhance the banks‘ profitability. Unless this technology bring increase customer satisfaction than the traditional brick and mortar branches customer may perceive as the same as different branches rather than a new means of delivery channels (Worku etal.,2016).

Electronics banking has several benefits like transferring money, collecting receivable, paying bill, productivity gains, transaction cost reduction, customer service improvement and at the same time establishing a means to control the overall activities on bank accounts (Abraham, 2012).

According to the study of Megersa (2010), there are a number of challenges which commercial banks operating in Ethiopia are facing in the provision of electronic banking services. One of the major hindrances is lack of appropriate technological infrastructure to support the service. The financial institutions also argue with internet challenges including its congested connection, security and quality of service.

There is also lack of specialists with the adequate technological skills to build that infrastructure. It might also be a challenge to convince customers, especially those who are not familiar with using the internet, and who might find it hard to try to deal with a service that they consider confusing and frustrating. Even though there are researches conducted related to this topic in Ethiopia and revealed that unavailability of a backbone network connecting the whole country; inadequacy of reliable and secure information infrastructure especially telecommunication

infrastructure; sluggish ICT penetration in banking sector; insufficient legal and regulatory support for E-banking etc. are the major current challenges of E-banking in the country.

Recently, some research projects has been executed regarding the challenges, and opportunities related to the E-Banking service of different Ethiopian banks but they are limited in covering some new services of Commercial Bank of Ethiopia like Cardless-Banking (a platform that provides individuals with access to banking services without requiring the use of a vard) and this study tried to show this service in addition to other familiar CBE services.

1.4.Objectives of the study

1.4.1.General objective

The main objective of the study was to assess and identify the challenges and opportunities of adoption and development of electronics-banking technology in Commercial Bank of Ethiopia.

1.4.2.Specific objectives

- ✓ To assess the benefits realized by Commercial Bank of Ethiopia in the adoption of electronic-banking technology.
- ✓ To identify the driving forces towards the adoption and development of E-Banking service in the bank.
- ✓ To identify the existing opportunities for the adoption and development of E-Banking service in CBE.
- ✓ To identify the challenges faced in the adoption and development of E-Banking service in Commercial Bank of Ethiopia.

1.5.Research Question

1. What were the benefits realized by CBE in the adoption and development of E-Banking service?
2. What were the driving forces towards the adoption and development of E-Banking service in the bank?
3. What were the existing opportunities for the adoption and development of E-Banking service in the bank?
4. What were the major challenges for the adoption and development of E-Banking service in CBE?

1.6.Significance of the study

Studying the challenges and opportunities of electronic banking in Commercial Bank of Ethiopia has significances; helps the organization to evaluate its performance and reduce its weakness, Provide an opportunity for policy makers and CBE bank managers to evaluate the opportunities and problems observed and take corrective measures for the promotion of E-banking, the finding would provide a framework for banks for the design of their future directions and to set their goals and objectives as per opportunities and challenges, and the study would also provide as an input for further research in the area.

1.7.Delimitation of the study

This study was focused on the opportunities and challenges of electronic Banking in Commercial Bank of Ethiopia (in the case of Nifas Silk District). From the financial transaction perspective the study had covered services like transfer funds online, pay bills, apply for loans and open a saving account and also non-financial transaction services like appliying for a new cheque book, getting account statements, update contact information and start/stop payments.

The study was also limited to surveying analysis of the purposely selected banks. Source of data was primary data using structured questionnaire for employees and officials of the bank who have high attachment with electronic banking and secondary data was obtained from different books, journal articles, various project papers and annual reports of the bank.

From the entire financial sector operating in Ethiopia, the research were covered particularly the activities of Commercial Bank of Ethiopia mainly focused on Nifs Silk district of Addia Ababa city administration.

1.8.Limitation of the study

The research is a descriptive study that was limited in scope and sample size. If all banks that are providing E-banking were included, the study would be more comprehensive and inclusive. The geographical coverage was limited to Addis Ababa Nifas silk district and the number of branches selected for the study was also limited. Thus, the findings of this study may not give a real reflection of the Ethiopian scenario in respect of the provision of E-Banking business for financial inclusion.

In addition the study had the following limitations:

- ✓ According to the researcher survey, respondents didn't provide full answers and showed lack of willingness to fill up questionnaire, in addition some respondents absent to complete the questionnaire.
- ✓ Some of the respondents did not come on time.
- ✓ The geographical coverage is limited to Nifas Silk Addis Ababa and the number of branches selected for the study was also limited.

1.9.Organization of the Research

This paper had five chapters. The first chapter dealt with the background of the study, statement of the problem, research questions, Objectives of the study, the significance of the study and limitation and delimitation of the study. The second chapter incorporated review of related literatures. The third chapter dealt with the research design and methodology including design of the study, source of data sample and sampling procedure and procedure of data collection. The fourth chapter dealt with analysis of the data and presentation of the output. In the fifth chapter the researcher concludes the findings of the study and recommended based on the conclusion made.

CHAPTER TWO

2. LITERATURE REVIEW

In this chapter the theoretical part and empirical parts of past literature were discussed in detail from the introduction of E-banking to research conducted on the world and in Ethiopia related to the challenge and opportunity of E-banking services. This review of literature establishes a framework, which can guide the study.

2.1.Theoritical Literature

2.1.1.Definition of E-banking

The definition of electronic banking varies among different researchers partially because of electronic banking refers to several types of services through which bank customers can request information and carry out most retail banking services via computer, television or mobile phone (Daniel,1999; Mols,1998;Sathye,1999). Different authors have defined electronic banking in different ways. Some of them are listed as follows. Electronic banking is an electronic connection between bank and customer in order to prepare, manage and control financial transactions (Burr, 1996). Electronic banking is the use of computer to retrieve and process banking data and to initiate transactions directly with a bank or other financial service provider remotely via a telecommunication network (Yang, 1997). Electronic-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 fund transfer (EFT), is simply the use of electronic means of transfer funds directly from one account to another, rather than by check or cash (Malak, 2007).

According to Daniel (1999), E-banking is online banking (or Internet banking) which allows customers to conduct financial transactions on a secure website operated by their retail or virtual bank, credit union or building society. Singh and Malhotra (2004) defined E-banking as the deployment of banking services and products over electronic and communication networks directly to customers.

Another definition of E-banking is that it is a service that allows an account holder to obtain account information and manage certain banking transactions through a personal computer via

the financial institution web site on the internet (Mattewos Kinfe, 2016). It is also defined as a complementary means of interacting with customers rather than a substitute for other channels such as physical branches (Kinoti Faith Kagendo 2015). In CBE E-payment and E-banking are used interchangeably and defined as electronic automated payment or banking channel that allows delivery of banking services in an effective, efficient and convenient way via electronic channels i.e., automated tellers machine (ATM), point-of-sale terminals (POS), mobile phones, internet and personal computers (CBE E-payment procedures 2016).

E-banking can be also defined as a banking system which any user with electronic devise like a personal computer and a browser can get connected to his bank's website to perform any of the virtual banking functions. In internet banking system, the bank has a centralized database that is web-enabled. (Krishna et al., 2015).

In general, E-banking is an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick-and-mortar institution.

2.1.2.Evolution of Electronic Banking

Since the late 1999s E-banking has developed from virtual insignificances to ten millions of users worldwide (Organization for Economic Cooperation and Development /OECD/, 2004). Electronic-banking is the product of different generations of electronic transactions. Automated Teller Machines were the first machines that provide electronic access to customers whereas in phone banking, users call to their banks computer system on their ordinary phone and use the phone keypad to perform transactions.

Personal Computer banking allowed users to interact with their bank by means of computer with a dial-up modem connection to the phone network. After those generations Deutsche Bank adopted the very first internet banking project in Latin America in 1996 and Citi bank developed a special "e-toolkit" across all its branches worldwide (UNCTAD, 2002).

Electronic-banking uses the web browser for user interface and the internet for data transfer and downloads software, and so has a potential for reducing maintenance costs. Electronic-banking provides current information and 7x24 accesses to banking services for users. The primary services provided by E-banks were 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 added to these primary services E-banking is widely used in (Dewan and Seidmann, 2001).

The evolution of banking technology has been driven by changes in distribution channels as evidenced by automated teller machine (ATM), Phone-banking, Tele banking, PC-banking and most recently internet banking (Chang, 2003).

E-banking is a high-order construct, which consists of several distribution channels. It should be noted that E-banking is a bigger platform than just banking via the Internet. However, the most general type of E-banking in our times is banking via the Internet, in other words Internet banking. The term E-banking can be described in many ways. In a very simple form, it can mean the provision of information or services by a bank to its customers, via a computer, television, telephone, or mobile phone (Daniel, 1999).

2.1.3.Forms of E-banking

2.1.3.1.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 other intelligent device.

2.1.3.2.Mobile banking

It can be defined as an occurrence when customers access a bank's network using cellular phones, pagers, personal digital assistant, or similar devices through communication wireless networks (Segun, 2011).

2.1.3.3.Automated Teller Machines (ATMs)

ATM is a machine where cash withdraw can be made over the machine without going in to the banking hall. It also sells recharge cards and transfer funds, it can be assessed 24 hours/7 days with account balance enquiry (Fenuga, 2010). Rose (cited in Prince, 2015), describes ATMs as follows: "an ATM combines a computer terminal, database system and cash vault in one unit, permitting customers to enter the bank's book keeping system with a plastic card containing a PIN or by punching a special code number into the computer terminal linked to the bank's computerized records 24 hours a day". It offers a great deal of banking services to clients. However, as a result of the rapid increase in technology, ATMs go to the extent of given

accounts balances and bill payments. Banks use this E-banking device, to gain competitive advantage. The combination of automation and human tellers gives more productivity for the bank during banking hours (Prince, 2015).

2.1.3.4.Point of Sale Transfer Terminals (POS)

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 (Dawd, 2009).

2.1.3.5.Mail Banking

It is another electronic banking service that makes it possible to communicate with the bank by electronic mail or e-mail. It is most frequently used for sending account statements at agreed periodicity to the client's mail box.

2.1.3.6.SMS Banking

SMS banking uses short text messages sent through customer's mobile phone. It can be used for both active and passive operations. After a certain operation is performed, a client can automatically receive information about his account balance. The bank can also sent information about current interest rates and exchange rates upon customer request.

2.1.3.7.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.

2.1.3.8.Debit cards

A debit card (also known as bank card or cheque card) is a plastic card that provides an alternative payment method to cash when making purchase. Functionally, it can be called an electronic cheque, as the funds are withdrawn directly from either the bank account or from the remaining balance on the card. In some cases, the cards are designed exclusively for use on the internet, and so there is no physical card (Mavri and Loannou, 2006).

2.1.3.9.Cardless banking

Cardless banking facilities allow consumers, either underbanked or banked, to electronically transfer funds using an ATM, self-service kiosk, mobile or Internet banking (Jones, 2008). Moodley-Isaacs (2011) adds that cardless facilities provide consumers with access to banking services such as transferring funds to individuals regardless of whether they are banked or unbanked. In addition, Innova (2015) refers to cardless banking as a service that allows consumers to authorise another individual to withdraw money from an ATM without using a card. It can thus be concluded that cardless banking facilities are a platform that provides individuals with access to banking services without requiring the use of a card.

2.1.4.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) includes:-

Operational risk - can be defined as the risk of loss resulting from inadequate internal process, people and systems or from external events. It is also referred to as transactional risk because it takes the form of inaccurate processing of transactions, non-enforceability of contracts, compromise in data integrity, data privacy and confidentiality, unauthorized access to banking systems and transactions etc. This type of risk can arise out of weakness in design, implementations and monitoring of banks' information system. There are also other sources of this risk such as inadequacies in technology, human factors like negligence by customers and employees, fraudulent actions by employees and hackers etc.

Security risks - internet is a public network of computers which facilitate flow of data to which there is unrestricted access. Banks using this medium for financial transactions must have proper technology and systems in place to build a secured environment for such transactions. Security risk arises on account of unauthorized access to a bank's critical information stores like

accounting system, risk management system; portfolio management system etc. A breach of security could result in direct financial loss to the bank.

Strategic risk - is the current and prospective impact on earnings or capitalizing from adverse business decisions, improper implementation of decisions, or lack of responsiveness to industry changes. This risk is a function of the compatibility of organization strategic goals, the business strategies developed to achieve those goals, the resources deployed against these goals, and the quality of implementation.

Management must understand the risks associated with internet banking before they make a decision to develop a particular class of business. Before adopting the new product, the management should consider whether the product or the technology is consistent with tangible business objectives in the bank's strategic plan. The bank also should consider whether adequate expertise and resources are available to identify, monitor and control risk in the internet banking business.

Reputational risk - is the current and prospective impact on earnings or capital arising from negative public opinion. This risk may expose the institution to litigation, financial loss, or a decline in its customer base. A bank's reputation can be damaged by poorly executed internet banking services or otherwise alienate customers and the public. Well-designed marketing, including disclosures, is one way to educate potential customer and help limit reputation risk.

Legal risk - arises from violation of laws, rules, regulations, or prescribed practices. Given the relatively new nature of internet banking, rights and obligations and applicability rules and regulations are ambiguous causing legal risk. Uncertainty about the validity of some agreements formed via electronic media and law regarding customer disclosure and privacy protection are other reasons for legal risks.

Money laundering risk - as internet banking transactions are conducted remotely banks may find difficult to apply traditional method for detecting and preventing undesirable criminal activities. Application of money laundering rules may also be inappropriate for some forms of electronic payments. Thus banks expose themselves to the money laundering risk. This may result in legal sanctions for non-compliance with know your customer (KYC) laws.

Credit risk - banks may not be able to properly evaluate the credit worthiness of the customer while extending credit through remote banking procedures, which could enhance credit risk. Facility of electronic bill payment in internet banking may cause credit risk if a third party intermediary fails to carry out its obligations with respect to the payment.

Liquidity risk - arises out of a bank's inability to meet its obligations when they become due without incurring unacceptable losses, even though the bank may ultimately be able to meet its obligations. The banks that are engaged in electronic money transfer activities must ensure that funds are adequate to cover redemption and settlement demands at any time. Failure to do so, besides exposing banks to liquidity risk, may even give rise to legal action and reputational risk.

2.1.5.Benefit of E-banking

Are tuning to information technology to improve business efficiency, service quality and attract new customers (Nath et al., 2001). Al-sukkar and Hasan (2005) aver that the most important factors encouraging customers to use online banking are lower fees, reduced paper work and human error. Subsequently electronic channels can lead to lower transaction costs which are very competitive (Claessens and Kliengbiel, 2000). Thus the banks can provide customer convenient, inexpensive access to the bank 24 hours a day and 7 days a week.

Increased availability and accessibility of more self-service distribution channels help bank administration in reducing the expensive branch network and associated staff overheads. A reduction in the percentage of customers visiting the bank with in an increase in alternative channels of distribution will also minimize in the queues in branches which ultimately leads to improved customer satisfaction. Devlin (1995) noted that electronic banking increases the power of the customer to make price comparisons across suppliers quickly and easily and as a consequence this pushes prices and margins downward. Technological innovation and competition in the banking sector have improved accessibility to a wide range of services to retrial and wholesale customers.

E-banking service provides a lot of benefits both to the customer and the bank itself. It is competitive branding and as well as better appreciation to the market demands. As such banks that provide services are known to be leaders in technology implementation and advancement. Thus, the better image brand they enjoy. The approach and adoption of the informational technology by businesses E-banking service provides a lot of benefits both to the customer and

the bank itself. It is competitive branding and as well as better appreciation to the market demands. As such banks that provide services are known to be leaders in technology implementation and advancement. Thus, the better image brand they enjoy. The approach and adoption of the informational technology by businesses has uprooted the constraint of time, distance and communication making the globe really a little village. With E-banking customers can check accounts, transfer money and can have access to numerous banking products and services (Prince, 2015). Humphrey et al., (2001) stated that the introduction and use of E-payment instruments holds the promise of broad benefit to both business and consumers in the form of reduced costs, greater convenience and more secure, reliable means of payment and settlement for a potentially vast range of goods and services offered worldwide over the internet or other electronic networks. Electronic Payments as argued by (Cobb, 2005) have a significant number of economic benefits when maximized can go a long way in con tributing immensely to economic development of a nation.

E-banking has made common open doors for banks and businesses around the world, and that is clear in the way they sort out financial transaction. Although opportunities to banks, there are various difficulties such as the innovation of IT applications, the obscuring business sector limits, rupturing modern boundaries, the passage of emerging competitors, and the development of new plans of action (Liao & Cheung, cited in Prince,2015).

2.1.5.1.Benefits of E-banking for banks

According to Jayawardhena and Foley (2000) the primary benefits of electronic banking are as follows:

- ✓ Price - in the long run a bank can save money by not paying for tellers or for managing branches. Plus, it is cheaper to make transactions over the internet.
- ✓ Customer base - the internet allows banks to reach the whole new market, because there are no geographic boundaries with internet.
- ✓ Efficiency - by providing internet access for their customer's banks becomes more efficient.
- ✓ Customer service and satisfaction - banking on the internet allow not only customer to have a full range of services but also it allows them some services not offered at any of the braches. A person can access and print information, forms and applications via

internet in his/her home or work place.

- ✓ Image - a bank seems more state of the art to customers of they provide internet access.

2.1.5.2.Benefits of E-banking for customers

The main advantage of E-banking for corporate customers as per (BankAway, 2001; Gurau, 2002) are as follows:

- ✓ Reduced costs in accessing and using banking services.
- ✓ Increased comfort and time saving - transactions can be made 7x24 without physically interacting with the bank.
- ✓ Quick and continuous access to information - corporations will have easier access to information as they can check multiple accounts.
- ✓ Better cash management - E-banking facilities speed up cash cycle and increases efficiency of business processes.

The main benefits from E-banking for private customers as per BankAway (2001) are as follows:

- ✓ Reduce costs - this is in terms of cost of availing and using of various banking products and services.
- ✓ Convenience - all the banking transactions can be performed from the comfort of home or office.
- ✓ Speed - the response of the medium is very fast.
- ✓ Fund management - customers can download their history of different accounts do a "what-if ''analysis on their own computer before effecting any transaction on the web. This will lead to a better fund management.

In addition,

- ✓ Withdrawing cash customers can also have mini bank statements balance inquiry at these ATMs.
- ✓ Through internet banking customer can operate his account while he is sitting in his home or office.
- ✓ There is no need to go to bank in person for such matter.
- ✓ E-banking has also helped greatly in paying utility bills.

2.1.6.Challenges of E-banking

According to Daghfous & Toufaily (2007) the main factors that can accelerate or slowdown the adoption of electronic mode of communication and distribution are organizational, structural and strategic factors. The organizational variables were bank size, functional division, technical staff, technical infrastructure, perceived risks, decision makers, international experience and mastery of innovations. Among the structural factors internal technological environment of the bank is an important factor in determining the adoption of E-banking. Ameena Farooqui and P. Ragani (2017) identified the challenges of electronic banking in India are as follows:

Security risk - a large group of customers refuses to adopt for E-banking because of uncertainty and security concerns. IAMAI report on 2006 indicated that 43% of internet users didn't use internet banking in India due to security issues.

The trust factor - conventional banking is preferred by customers because of lack of trust on online banking. They have the perception that online transaction is risky due to fear of fraud.

Customer awareness - knowing about E-banking facilities and procedures is in lower level in Indian scenario. Banks are not able to disseminate proper information about the use, benefit and facility of electronic banking.

Privacy risk - the risk of disclosing private information and fear of identity theft is the major challenges that inhibit customers from using e-banking. Customers worry about their privacy and feel that the bank may invade their privacy by utilizing their information for marketing and other purposes without the consent of customers.

Availability of personnel service - banks must be able to provide complete personnel service to customers who come with expectations. These services are computerization and innovative mechanization, better customer services, effective managerial culture, strong organiational culture etc.

Implementation of global technology - there is a need to have adequate infrastructure and facility and human capacity building.

According to Bafna and Nahar (2017) the challenges of E-banking in India are listed as follows:

System architecture and design - banks face the risk of unfair choice of technology, improper system design and inadequate control processes.

Operational risk - is an erroneous processing of transactions, contracts non-enforceability, data confidentiality etc.

Less internet penetration

A study conducted by Alhaji Ibrahim H. (2009) identified that the following are the critical challenges of E-banking in Nigeria.

- ✓ Lack of technological infrastructure - the implementation of E-banking is highly affected by the unavailability of ICT infrastructure. Most rural areas have no internet access.
- ✓ ICT equipment costs - relative to the country's per capital income the cost of ICT is critical. This makes the entry cost is higher as compared to the developed countries.
- ✓ Regulatory and legal issues - inexistence of proper legal and regulatory framework.
- ✓ Non-readiness of the bank and other stakeholders.
- ✓ Resistance to changes - among customers and staffs due to lack of awareness about the new technologies.
- ✓ Security - disclosure of private information, counterfeiting and illegal alteration of payment data may be rampant.
- ✓ Frequent connectivity failure in telephone lines.
- ✓ Frequent interruption of power.

Challenges of E-banking in Ethiopia

In Ethiopia the banking sectors face very several challenges to fully adopt electronic payment mechanisms. Research conducted by Gardachew (2010) identified the following challenges that Ethiopian commercial banks faces.

- ✓ Low level of internet penetration and poor telecommunication infrastructure.
- ✓ Lack of suitable legal and regulatory frameworks for e-commerce and e-payments.
- ✓ Political instabilities in neighboring countries - there is no peace in the horn of Africa such as in south Sudan, Somalia and Eritrea etc.
- ✓ High illiteracy rates - most of Ethiopians especially in rural areas are illiterate and they have no knowhow about how to use electronic banking services.
- ✓ High cost of internet - the cost of entry in to the E-commerce market is higher. These include high startup costs, high computer costs and telecommunication and licensing

requirements.

- ✓ Absence of financial networks that links one bank with other bank.
- ✓ Frequent power interruption - lack of reliable power supply is also a key challenge in Ethiopia.

2.1.7.Prospects of E-Banking in developing countries

According to M.s, M Rahman (2008) in Bangladesh Electronic-banking is now a global phenomenon. Apart from the developed countries, the developing countries are experiencing strong growth in E-banking. The government's emphasis on setting up ICT Park, raising allocation for developing ICT infrastructure, waiving taxes on computer peripherals and other measures including the automation program of banking sector and competition among the scheduled banks in improving customer services have accelerated the prospects of E-banking.

In addition, as investigated by Alhaji Ibrahim H. (2009) using exploratory study, the following are among the critical challenges for the adoption of e-banking in Nigeria:

- ✓ Lack of Technological Infrastructure – the implementation of e-payment is been impeded by unavailability of ICT infrastructure. Most rural areas where majority of small and medium scale industries are concentrated have no access to internet facilities
- ✓ ICT Equipment Costs – where available, the cost of ICT is a critical factor relative to per capital income. This makes the cost of entry higher compared to developed countries
- ✓ Regulatory and Legal Issues – inexistence of proper legal and regulatory framework.
- ✓ Non-readiness of banks and other stake holders (acceptability) – even though some have shown impressive willingness, some banks are still not fully ready to for this new payment regime.

The fact that the overall commercial banks branch in Ethiopia compared to the size of the population and the area of the country is very minimal, it creates a good advantage to expand E-banking facilities and reach the wide spread population of the country through virtual banking system.

2.2.Empirical Literature

Different empirical studies examined the challenges and opportunities of E-banking service, adoption and development in both developed and developing countries in general and also studies in Ethiopia are available. A brief review of each of different studies is presented in the following discussions.

Garedachew (2010) conducted a research on the opportunities and challenges of E-banking in Ethiopia and found that lack of suitable legal and regulatory frameworks for E-commerce and E-payment, political instabilities in neighboring countries, frequent power interruption, lack of trained personnel, high rates of illiteracy and absence of financial networks that link different banks are the major challenges. The study showed opportunities offered by ICT through E-learning programs and commitment of the government on the development of ICT infrastructures is considered as drivers of using e- commerce and e-payments.

The study conducted in Bangladesh on the challenge of E-banking adoption and implementation by M. M. Rahman (2008). The study result point out that despite huge demand from the business community as well as the retail customers particularly the urban customers, electronic banking (E-banking) is still at a budding state due mainly to a number of constraints such as unavailability of a backbone network connecting the whole country; inadequacy of reliable and secure information infrastructure especially telecommunication infrastructure; sluggish ICT penetration in banking sector; insufficient legal and regulatory support for adopting E-banking and so on.

Sumra, et al., (2011) carried out a study on the impact of E-banking on the profitability of Pakistani banks. The study was qualitative in nature assessing the qualitative factors in determining the impact of E-banking. It also discussed the effect of customers' literacy on provision of services from banks' perspective. The study was conducted in 12 Pakistani banks from three cities. The results showed that E-banking has increased the profitability of banks; it has enabled the banks to meet their costs and earn profits even in the short span of time. The illiteracy of customers is not regarded as a major impediment in provision of their products and services. For banks, the main motive to adopt E-banking is to increase their clientage and to retain their customers. The profitability of banks has augmented in transitioning to E-banking medium. It would be important to carry out a similar qualitative research in Kenya to determine whether similar results would be obtained.

Wondwossen and Tsegai (2005) found out that the main obstacles to the development of E-payments are lack of customers trust in the initiatives, unavailability of payment laws and controlling system, lack of skilled manpower and frequent interruption of power.

Another study conducted by Seyed (2013) on studying the effect of E-Banking on Bank Profitability; Case Study Selected Asian Countries stated E-Banking as one of the gifts to human beings by computer technology. The study covers four banks that have adopted online banking in Asian selected countries between 1990 and 2010 with support of a short-run cointegration relationship after allowing for the heterogeneous country effect. The long-run relationship is estimated using a full-modified OLS. By using bank specific and macroeconomic control variables, the researcher investigate the impact of internet banking on the return on assets (ROA) and equity (ROE). Accordingly, the results show that internet banking variable has had a positive effect on the performance of the banking system.

The study of Ayana (2014) aims to identify factors that affect the adoption of E-banking in the Ethiopian banking industry. The result indicated that security risk, lack of trust, lack of legal and regulatory framework, lack of ICT infrastructure and absence of competition between local and foreign banks as the major barriers that Ethiopian banking industry faces.

Khalfan et al., (2006) conducted a study on factors influencing the adoption of internet banking in Oman and found out that security and data confidentiality issues have been the major challenges for the adoption of E-commerce in the country. The banks were reluctant to use E-commerce applications because they fear that the electronic transactions were exposed to hackers and viruses, which are beyond their control. Lack of top management support is also one of the major problems in the adoption process.

Gikandi and Bloor (2010) studied on adoption and effectiveness of electronic banking in Kenya. In the study, internet security was identified as the most important future challenge in E-banking while customer trust, privacy and awareness were also recognized as great challenges. It also concluded that cost reduction and customer related factors have emerged as the main drivers of e-banking adoption in Kenya.

Sumra, et al., (2011) carried out a study on the impact of e-banking on the profitability of Pakistani banks. The result showed that e-banking has increased banks profitability; it has

enabled the banks to meet their costs and earn profits. For banks, the main motive to adopt e-banking is to increase their customer base and to retain the customers.

The Study conducted by Dula (2019) on the E-Banking Service Quality of Ethiopian Banks depicted that a significant proportion of the sample respondents e-banking services like POS and Internet banking services potential were not adequately used by customers and the major problem that customers experienced on mobile banking was the lengthy steps in processing transactions.

Angelakoplous and Mihiotis (2011) researched on e-banking challenges and opportunities in Greece. The research findings were banks expand e-banking services to remain competitive, to keep track with technological developments and to benefit from the lower cost of electronic transactions. The major problems faced were low response rate from customers and the implementation f security and data protection mechanisms.

2.3.Knowledge gap

A lot of studies concerning electronic banking have been conducted in different countries throughout the world. However, in Ethiopia there are a very limited number of studies conducted regarding E-banking services like (Ayana, 2012), (Garedachew, 2010), (Wondossen and Tsegai, 2005). Therefore, more studies are required to identify and assess the challenges and opportunities that affect the adoption, development and distribution of E-banking services. The previous studies focused on factors challenging the adoption of E-banking. This study will focus on: first, the adoption and development of E-banking services. Second, this study covers almost all types of E-banking services provided by CBE including the new product that is Cardless Banking.

2.4.Theories of electronic banking adoption

Researchers have been used different frameworks in the study of adopting new technological innovations. Among the frameworks that have been developed under different studies Technology-Organization-Environment, Technology Acceptance model, Theory of Planned Behavior, Innovation Diffusion Theory and Theory of Reasoned Actions were the main ones.

A. Technology-Organization-Environment (TOE) framework

According to Tornatzky and Fleischer (1990), technology adoption within an organization is influenced by factors pertaining to technological context, organizational context and the external environment.

The technological factor refers to adopter's perception of E-banking attributes. Technological factors include complexity, compatibility, relative advantage, ease of use and usefulness. These factors are related to challenges to technology adoption and its perceived benefits. The perceived benefits for managers could be direct, such as cost saving or income generation, or indirect, such as potential opportunities in new market, marketing, or publicity (Rogers, 2003).

The organizational factors refer the organizations characteristics that influence its ability to adopt and use E-banking. The organizational factors include IT user's community, organizational structure, firm's process, firm size, technological capabilities of the organization's members, the technological and financial resources available, process of selecting and implementing IT, management backing and support for the project (Harrison, 2012).

The environmental factors refers to the external environment in which an organization operates and its condition for the development of E-banking services. environmental factors related to IT adoption includes pressures from competitors, customers or suppliers, the role of government (incentives), partners, alliances, technological infrastructures, technology consultants, image of internet technology and users expectations (Harrison, 2012).

B. Technology Acceptance Model (TAM)

This model was developed to particularly explain the computer usage behavior. TAM defines the causal relationship between perceived usefulness, ease of use, system design features, and attitudes towards using and actual usage behavior. Hence, TAM model is useful in applied contexts for forecasting and evaluating user acceptance of information technology (Davis, 1993).

According to TAM model, perceived usefulness (PU) perceived ease of use (PEOU) are the two key beliefs that are relevant for computer acceptance behavior. Perceived usefulness (PU) is defined as the degree to which the potential user thinks that using a particular system would increase job performance. Whereas perceived ease of use (PEOU) is defined as the degree to which a potential user thinks that using a particular system would be free of effort (Davis, 1989).

C. Theory of Planned Behavior (TPB)

TPB is originally developed based on the theory of reasoned action which explains almost any human behavior. According to TRA, a person's behavioral intention guides his actual behavior of performing some certain action and where subjective norm and attitude toward the behavior determine the behavioral intention (Liao et al., 2007).

D. Innovation Diffusion Theory (IDT)

IDT includes five characteristics which greatly influence adoption (Rogers, 1995).

- ✓ Relative advantage - the degree to which an innovation is perceived to be better than the idea it supersedes.
- ✓ Compatibility - the degree to which an innovation is perceived as consistent with the existent values, past experiences and needs of potential adopters.
- ✓ Complexity - the degree to which an innovation is perceived as relatively difficult to understand and use.
- ✓ Trialabilty - the degree to which an innovation may be experimented with on a limited basis.
- ✓ Observability - the degree to which the results of an innovation are visible to others.

E. Theory of Reasoned Action (TRA)

According to TRA, behavioral intention of an individual is a measure of the strength of one's intention to perform a specified behavior. Behavioral intention is determined by two factors. The first is attitudes towards behavior, which is a function of beliefs that performing the behavior possesses certain attributes and evaluation of those beliefs. The second is subjective norm, which is the perception of social groups that is what specific individuals or groups think that a person should or should not perform (Belleau et al., 2000).

In this study, organization-environment framework was used to have a more precise forecast on challenges and opportunities of adopting and developing of electronic-banking technologies in the case of Commercial Bank of Ethiopia. The dependent variable is the adoption and development of electronic-banking technology in Commercial Bank of Ethiopia while the independent variables are the, organizational and environmental factors.

CHAPTER THREE

3. RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

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

3.2.Research approach

Research approach for this study was selected by researcher(s) based on the research purpose, the nature of the research, the problem area, and research questions (Alhamdani et al., 2006).The research approach in this study was chosen based on the purpose and the research questions set out to be addressed. In order to attain the objective of the study and answer the research questions, the researcher has adopted mixed research approach. The rationale of using a mixed approach was 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.

3.3.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).

In order to achieve the main objective of the study, it had used descriptive research design to gather as much information as possible to show the challenges and opportunities of electronic banking in Commercial Bank of Ethiopia. According to Robson (2002) the three main classes of research design are explorative, descriptive and explanative. Exploratory design is used when it deals with unknown problem or for the seeking of new insights. Explanatory research is used

when the problem is clearly defined or for the explaining of specific situation. Finally, descriptive research design is mainly concerned with describing the nature or the condition and the degree in detail of present situation. Creswell (2003) also stated that descriptive research is used to gather information about the current existing condition.

This study had focused on describing the current situation of the problem and answers the research questions which are in the form of ‘‘what" and will identify the factors that positively or negatively affects the adoption and development of electronic banking in Commercial Bank of Ethiopia. Moreover, this research aimed to explain the phenomenon and assess the current practice of E-banking. Therefore, Descriptive research was the best option to achieve the research objectives.

3.4.Research population and sampling

3.4.1.Target population

Population is the entire collection of items from which samples can be drawn (Yahiya, 2011). For this study, the target population is employees of CBE Nifas Silk District. The respondents which were 306, were selected from 10 branches of the the district and founded only in that district which were selected using systematic random sampling technique from the total 74 branches located in the district.

3.4.2.Sampling design

Since all the districts of Commercial Bank of Ethiopia are similar in terms of organizational culture, working environment and working procedure the researcher had selected Nifas Silk district with the selected ten branches for his own convenience to save time and money.

Hence, the total numbers of Commercial Bank Ethiopia branches under Nifas Silk district were 74 as of 28/11/2021 according to the Nifas Silk district data. The researcher had used employees, assistant managers (operation, business and internal control managers), branch managers under this district branches. By considering the homogenous characteristics of branches in terms of organizational culture, working environment and working procedure, 10 branches out of the total branches had been selected purposively to determine the total target population. To collect reliable and valid data, the study considered the grade level of each branch in the selection process. Employees working in the selected branch have had an equal chance to be participated

in the research process. All the managers and the assistant managers had participated in the process. Systematic random sampling method was used in employees‘ selection.

The population includes individual and organization which were; branch managers, assistant managers (business, operation, internal control, &Customer service managers) and employees (Credit risk office, senior banking business Officer, Banking business officer, Banking Operation Officer, Customer Service Officer, junior officers, bank trainees, digital officer, customer relation officer, management trainee, system administrator, and IT Officer). Based on the data obtained from Nifas Silk District human resource department total population in the selected branches are as follows.

Table 3.1 Total numbers of target population

	Branch Name	Branch grade	Manager	Employees	Total
1	NEFAS SILK	SPECIAL	1	52	53
2	JEMO	II	1	40	41
3	LAFTO	IV	1	32	33
4	ADEY ABABA	III	1	28	29
5	ERTU LEBU	III	1	28	29
6	MEKENISA	IV	1	37	38
7	LEBU	III	1	32	33
8	LAFTO VIEW	II	1	22	23
9	MELKASHENE MAZORIA	II	1	15	16
10	MEKANISA CONDOMINIUM	II	1	20	21
Total			10	306	316

Source: Developed by the researcher; 2022

In these branches the staffs had different positions starting from bank trainee to branch managers. The number of staffs in each branch is different from one another. In this case, it is necessary to obtain proportional number of employees from each branch as respondents.

In selecting the research sample from branch, the researcher had applied systematic random sampling method. Thus, accordingly the researcher groups the target population of the worker based on educational level, work experience. The sample size of the respondents was set randomly by using sample determination formula developed by Yemane (1967):

$$n = N/1+N(e)2$$

Where:

- n is the sample size,
- N is the population size, and
- e is the level of precision or sampling error = (0.05)

We have N=306

n=306/1+306(0.05) 2=173

So, sample size of employees selected from 10 sub branches in Nifas Silk subcity was 173. In addition we have 10 respondents which are purposively selected from each branch who was managers.

Hence, the total sample size was 183. Since the number of people in each bank branches were not the same, the number of samples for each bank branch was calculated by the following formula:

$n_1 = N1*n/N$

Where:-

- n_1= number of samples in each bank branch
- N_1= total number of population in each bank branch
- N= total number of population
- n= total number of samples

Example. Nifas Silk branch

Given - N_1 =173, n = 52, and N = 306

$$n_1 = N_1 * n/N$$

$$= 173*52/306 = 29$$

Table 3.2 Number of employees and proportion of samples taken from each branch

Name of branch	Total no of employees	Proportion of pop	Total sample selected from branch
NEFAS SILK	52	0.56	29
JEMO	40	0.57	23
LAFTO	32	0.56	18
ADEY ABABA	28	0.57	16
ERTU LEBU	28	0.57	16
MEKENISA	37	0.57	21
LEBU	32	0.56	18
LAFTO VIEW	22	0.54	12
MELKASHENE MAZORIA	15	0.6	9
MEKANISA CONDOMINIUM	20	0.55	11
Total	306		173

Source: Developed by the researcher; 2022

N.B. The proportion is obtained by dividing Total sample selected from each branch to the total number of employees from each branch.

After each bank branch sample size was determined, the researcher used systematic random sampling method to select the target employees since their job is directly related to the work. The researcher did not go beyond this sample size because of the assumption that increasing the number of sample size more than the specified doesn't increase additional information. Rather it could be duplication of information.

3.5.Source of data

The study was used both primary and secondary data. Primary data was collected from employees and officials of the bank who have high attachment with electronic banking. Secondary data was obtained from different books, Journals and websites.

3.6 Method of data collection

3.6.1.Types of data

For accomplishing the research work and research objectives both primary and secondary data were collected. The primary data was collected from those employees of the banks i.e. employees and managers of the bank branches of Nifas Silk district. Thus, in order to obtain the reliable and sufficient information, structured questionnaires were used as data collecting instruments for both quantitatitave and qualitative (open ended questionarries).

In an effort to make the research more valid, credible and applicable secondary data had used for the issues raised on the research. For this purpose published sources i.e. different books, web pages, policy directives, journal articles and various project papers etc. were investigated.

3.6.2.Procedure for data collection

In order to collect sufficient data that can answer the research questions, the researcher designed questionnaires to bank staffs and management members who have related to their day to day activities. The questionnaires were distributed to staff members. Data from both sources was collected and organized in frequency and mean score value interpretation tables.

3.7.Methods of data processing

Once the data was collected, the next activity is processing the data in order to be ready for analysis. The collected data will be suitable for use by filtering out the relevant data from the mass of collected data. This is because there may be irrelevant, incomplete and inaccurate data. To get meaning full data, which was ready for use, the researcher had done the following activities.

Editing - This had done to reduce errors and confusions in the raw data. So, inspection, correction and modification of the collected data was undertaken to minimize errors.

Coding - This had done after editing the collected data, which refers to giving codes to the edited data.

Tabulation and summarization - After the data was edited and coded the researcher had used tables to summarize the data.

3.8.Data analysis method

The collected data had been checked, sorted and screened for any errors and then they were tallied to prepare tables for making analysis. The researcher had used both qualitative and quantitative data analysis techniques. Finally the data was processed and analyzed by statistical package for social science (SPSS) version 26. To analyze the data descriptive statistics method had made based on the results of the tables and figures using mean value and percentage rank order. The results of the study had present using tables.

3.9.Validity and Reliability

Validity is explained as the degree to which a study precisely replicates or reviews the particular idea that the researchers are trying to calculate. (Campbell & Stanley, 1966) as cited by (Muhammed Rahimuddin and Syed Asif Abbas Bukharis 2010). Reliability is also explained as a condition whereby scales show a satisfactory level of internal steadiness, uniformity, self sufficiency and self determination (Muhammed Rahimuddin and Syed Asif Abbas Bukharis 2010). It is also stated as the extent to which data collection techniques or analysis procedures will yield consistent finding (Easterby-Smith et al., 2002) as sited by Mark Saunders, Philip Lewis, AdrianThornhill (2007) in their book of "research methods for business students''.

The study was based on mainly secondary and primary source of data. The secondary data was obtained from the banks E-payment department and publication made by the respective organs of the bank, different books, web pages, policy directives, journal articles and various project papers. With regard to the primary data questionnaires were planned to gather information concerning the customer compliant handling method, ways and trend of E-banking user recruitment method and the accessibility of the system that employees observed as a challenge and opportunities for the prospect of E-banking technologies in the bank. The questionnaires were distributed for those employees that are close to the technology in their stay in the bank and currently are working in the position and or experienced the case in the past. The issues raised in the questionnaires were developed based on the researcher experience as a CBE customer and based on the different reviewed journals and articles for the case. All these made the data collecting means reliable and enhance the validity of the findings.

Table 3.3 Cronbach's Alpha for each factor of the questionnaire and the entire questionnaire

Variables	N items	Cronbach's alpha
Operational Benefits	5	.727
Service Benefits	10	.855
Internal Motives	5	.768
External Motives	4	.673
Organizational Factors	4	.680
Financial and Marketing Factors	2	.674
Plan and Policy Factors	2	.505
Technological Factors	5	.824
Legal Factors	2	.792
Political Factors	1	-
Social Factors	2	.575
Economic Factors	1	-
Opportunities	7	.839

Source: Developed by the researcher; 2022

Table 3.3 above shows the values of Cronbach's Alpha for each filed of the questionnaire and the entire questionnaire. The result ensures the reliability of each field of the questionnaire. Thereby, it

can be said that it is proved that the questionnaire is valid, reliable, and ready for distribution for the population sample. The acceptable values are 0.5 by Nunnally (1970) and 0.6 by Moss et al. (1998) quoted (Saed, Waseen, Sikander, &Rizwan, 2014).

3.10.Ethical considerations

The researcher secured prior permission from each branch managers and employees to fill the questionnaires and the respondents were informed the fact that questionnaires were used only for the intended purpose that is for academic purpose only. The answers were kept confidential.

CHAPTER FOUR

4. DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1. Indroduction

This chapter, it can be said, is the main part of this study. It basically reveals the finding of the research along with discussion which is embedded in every piece of its section. The chapter has eight major sections. The first section presents quantitative and qualitative data analysis of the study while the second section presents and discusses the demographic characteristics of respondent's. The third section presents mean score value interpretation of the study while the fourth section presents and explain the operational and service benefits that Commercial Bank of Ethiopia realized from the adoption of e-banking system. The fifth and sixth respectively communicate a concluding remark on the motives Commercial Bank of Ethiopia to introduce and the findings on organizational and environmental factors that affect the development and adoption of e-banking technologies. The last two sections (section seventh and eighth) provide an existing opportunities in the country that initiates the adoption of e-banking and discussion of the study with previous studies respectively.

4.2. Quantitative and Qualitative Data Analysis

As indicated in the preceding chapter, the study utilized descriptive statistics as brief descriptive coefficients that summarize a given data set, which can be either a representation of the entire or a sample of a population. The following subsections provide summary of the descriptive statistics of quantitative and qualitative data gathered through administering the questionnaire.

4.2.1. Response rate

The researcher prepared and issued out 183 questionnaires to potential respondents. However, 23 respondents hadn't responded and returned back the questionnaire. It is evident that only 87% completed questionnaires have been received and analyzed, while 13% questionnaires didn't reach the researcher (Table 4.1).

Table 4.1 Response rate

Categories	Respondent	Percentage
Responded	160	87%
Not Responed	23	13%
Total	183	100%

Source own survey; 2022

4.3.Demographic Characteristics of respondents

This section attempts to show the overall demographic characteristics of respondents for this research. Several scholars in the area of banking and finance asserts that such demographic features as gender, age, once educational background, experience, salary, and position have influence on the development and adoption of electronic banking technology.

A.Gender of Respondent

Table 4.2 Gender composition of the respondents

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Male	100	62.5	62.5	62.5
Female	60	37.5	37.5	100.0
Total	160	100.0	100.0	

Source own survey; 2022

As the above graph shows from the total number of respondents 62.5% are male respondents while the remaining 37.5% are females.

B. Age composition of the Respondent

Table 4.3 Age composition of the respondent

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
21-30	85	53.1	53.1	53.1
31-40	61	38.1	38.1	91.3

41 & above	14	8.8	8.8	100.0
Total	160	100.0	100.0	

Source own survey; 2022

As the above table illustrates majority of respondents, about 53.1%, are between the age of 21 and 30.Those respondents that are between 31 and 40 age amounts approximately 38% while 8.8% percent are above the age of 41.

C. Educational qualification of Respondents

Education is also among the list of factors that influence the adoption of electronic-banking technology. In every education and discipline at least there are technological elements.

Table 4.4 Educational Qualification composition of the respondents in the sample organization

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
BA Degree	97	60.6	60.6	60.6
MA degree and above	63	39.4	39.4	100.0
Total	160	100.0	100.0	

Source own survey; 2022

The above table illustrates that the educational qualification of the respondent for this research. Many participants of the research, 60.6%of the sample have a bachelor's degree while master's degree holders account for 39.4%.

D. Position of respondent

Respondents were also asked about their position in their institution they are currently working in. The result indicates that many of them are banking business officer, banking operation officer and customer service officer. This information is detailed using the table below.

Table 4.5 Work place position composition of the respondents in the sample organization

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Branch Manager	9	5.6	5.6	5.6

Business Manager	27	16.9	16.9	22.5
Senior Officer	32	20.0	20.0	42.5
BBO/BOO/CSO	60	37.5	37.5	80.0
Junior Officer	23	14.4	14.4	94.4
Bank trainee	3	1.9	1.9	96.3
Digital officer	1	0.6	0.6	96.9
CRO (Customer relation officer)	1	0.6	0.6	97.5
Management Trainee	1	0.6	0.6	98.1
System Adminstrator	1	0.6	0.6	98.8
IT Officer	2	1.3	1.3	100.0
Total	160	100.0	100.0	

Source own survey; 2022

E. Salary of the respondent

In many job satisfaction studies, personal wage (salary) is found to be an important predictor of employees' satisfaction in their work place. If workers are satisfied, they might not reluctant to adopt new technology in their work environment.

Table 4.6 Salary of the respondents in the sample organization

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
5001-10000	37	23.1	23.1	23.1
10001-15000	62	38.8	38.8	61.9
15000 and above	61	38.1	38.1	100.0
Total	160	100.0	100.0	

Source own survey; 2022

As the above table indicates 23.1% of respondents have got salary between 5001-10000, and 38.8% of respondents have got a salary between 10001-15000 Ethiopian Birr. On the other hand 38.1% of the participants have got a salary of 15000 and above.

F. Total work experience in the organization

Table 4.7 work experience composition of the respondents

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
0-3	37	23.1	23.1	23.1
4-6	57	35.6	35.6	58.8
7-9	27	16.9	16.9	75.6
10 and above	39	24.4	24.4	100.0
Total	160	100.0	100.0	

Source own survey; 2022

As illustrated by the above table respondents were asked their years of experience in their organization and the result revealed that majority of them (35.6%) have between 4-6 years of experience while24.4% of the respondents had an experience of above ten years. The study also revealed that 23.1% of the respondents had an experience of between 0-3 years.The remaining 16.9% of the respondents had an experience of between 7-9. Therefore most respondents have had long enough work experience in the organization that they are working in.

4.4.Mean score value Interpretation

According to Hadiyanto Hadiyanto, Failasofah Failasofah, and Amirul Mukminin (2017), mean score value is interpretated as here below table 4.8.

Table 4.8 Interpretation of Mean score value

Mean Score Value	Interpretation
1.00 – 2.33	Low/Negative
2.34 – 3.66	Average/Neutral
3.67 – 5.00	High/Positive

4.5.Benefits realized from the adoption and development of electronic banking technology in Commercial bank of Ethiopia

Perceived benefits are the gains or improvements derived from existing traditional ways of operating business transactions using electronic banking technology applications. Banks have begun to offer electronic banking services to improve the effectiveness of distribution channel through reducing the transaction cost and increasing the speed of services. Recently, electronic banking has become the way of development of banking system and the role of electronic banking is increasing in many countries. It offers opportunities to create service processes that demand few internal resources and therefore, lower cost. AS well as it provides wider availability and possibility to reach more customers. From the customers' point of view, electronic banking allows customers easier access to financial services and time saving in managing their finance. Indeed, the emergence of electronic banking has prompted many banks to develop marketing and information technology strategies in order to stay competitive.

The following section summarizes respondents' views of expectations and perceived benefits for electronic banking deployment .Benefits expected to gain from electronic banking as an option is a major factor for a bank‟s decision to adoption and growth of electronic banking technology. Some of these benefits include facilitate the development of new products and new business, improvement productivity, cost saving, increased market share, speed and efficiency of doing business, improvement in customer service and others.

A total of 15 question on benefits of on the adoption and development of electronic banking were asked to indicate the extent to which each respondent agrees to corresponding close ended statements rated a five-point Likert types scales ranging from, 1 "strongly disagree" to, 5 "strongly agree". Statistical results on variables results under the benefits of electronic banking including the number of frequencies, the mean, and standard deviation of the data points. The valid column shows that the number of respondents who provided answer for each correspondent variables. The mean tried to tell the averages where the data points fall for each specific variable while the standard deviation column showed the variability of the data points for each variable under considerations.

Accordingly, the researcher tried to interpret the mean of data points. The researcher tried to triangulate and complement the results obtained from the open ended questions and the results

obtained from the likert scale type statements pertaining to similar variables when found appropriate. The following section illustrates respondents' view of expectations and perceived benefits for adoption and development electronic banking. For analysis purpose perceived benefits are classified in to operational efficiency and service benefits.

4.5.1. Operational Benefits

Despite different challenges faced by adopting and extending of electronic banking technologies in Commercial Bank of Ethiopia, there are enormous benefits expected from the adoption and extending of electronic-banking technologies which includes operational and service benefits. Operational benefits covered in the survey are presented in the here below in the table 4.9.

Table 4.9 Operational benefits that Commercial Bank of Ethiopia gained from the adoption and growth of electronic banking technology

Operational Benefits	N	Minimum	Maximum	Mean	SD
E-banking system helps to reduce paper work	160	1.00	5.00	4.7250	0.61378
It helps to lower transaction cost	160	1.00	5.00	4.4500	0.87452
It helps to enhance productivity in the bank	159	2.00	5.00	4.6541	0.55103
It supports to enhance foreign currency generation	155	1.00	5.00	4.0387	0.91796
It helps to increase reliability and reducing of errors	158	1.00	5.00	4.0823	1.01558
Valid N (listwise)	152				
Aggregate				4.3900	0.79457

Source: own survey; 2022

The potential operational efficiency benefits of electronic banking as perceived by the Commercial Bank of Ethiopia identified in this study as captured in the above table 4.9., the respondents were agreed that the adoption and development of electronic banking technology in Commercial Bank of Ethiopia will reduce the paper work and lower transaction costs. This is evidenced by the data collected from the respondents with the mean score value 4.72 and 4.45

respectively . Similarly, from the open ended questions respondents explained that the adoption and growth of electronic banking in Commercial Bank of Ethiopia will reduce the workload of the branch offices, will reduce cost of manpower interms of employment, will control any fraud activities simply, will minimize cost of time and cost of transaction i.e. CBE strongly wants to adopt the satisfaction of its customers, will achieve cost reduction and become means of proft, will reduce customer crowdness i.e. large number of customers waiting the service, and finally CBE will get charge commission when customer using e-payment technology.

The result further described that large number of respondents (68.6% strongly agree, 28.9% agree, please refer the Appendix B) were agreed that the adoption and development of electronic banking technology will increase productivity in the bank as the mean score value were found 4.65 likwise, the adoption and growth of electronic banking technology will generate foreign currencies as the large number of respondents (36.8% strongly agree, 36.1% agree, please refer the Appendix B)this is agreement is based on the response of the respondents with the mean score value is 4.03. Besides, the respondents including Branch managers were answered the open-ended questions that the adoption and growth of electronic banking technology in Commercial Bank of Ethiopia has a crucial factor not only for trade but also for economy growth in the country through improving the capital inflow and solve foreign currency shortage that the country faced.

Furthermore, the result revealed that electronic banking technology identified in this study increase reliability and reducing errors. This is in line with the agreement of the response of the respondents mean score value were found 4.08.

On the other way, the aggregate mean value is 4.39 which represent a high positive response on the level of measurement scale that means, the largest number of study participants agreed on the issue(s) or item(s) presented to them. On the basis the above mean score values of , it is possible to say that:

- ✓ The E-banking system highly reduced paper work and transaction cost with in the organization.
- ✓ The system highly enhanced productivity and foreign currency generation with in the in the bank.

- ✓ The system highly increased reliability and reducing of errors with in the bank.

4.5.2. Service Benefits

In addition to operational benefits, there are also service benefits that the Commercial Bank of Ethiopia can attain from the adoption and development of electronic banking technology. Such service benefits covered in the survey as presented here below in the table 4.10.

Table 4.10 Service benefits that the Commercial Bank of Ethiopia gained from adoption and growth of electronic banking technology

Service Benefits	N	Minimum	Maximum	Mean	SD
It patronize to improve customer service	156	2.00	5.00	4.4872	0.67668
Facilitates marketing and market access	158	1.00	5.00	4.3481	0.76489
It patronize to Improve transaction speed	158	2.00	5.00	4.4177	0.75894
It facilitates the development of new products and new business in Commercial Bank of Ethiopia	159	1.00	5.00	4.4151	0.75726
It helps to overcome geographical limitations	158	2.00	5.00	4.3797	0.77876
It helps to reduce queues in the banking hall	153	2.00	5.00	4.3203	0.75788
It helps to access bank account information 24 hours by 7 days	160	2.00	5.00	4.5438	0.65249
It supports to enhance accessibility of the bank services (in terms of place)	159	2.00	5.00	4.5283	0.70092
It encourages price transparency	158	2.00	5.00	4.3544	0.72337
It helps to create better relationship between the bank and clients	155	1.00	5.00	4.2903	0.83719
Valid N (listwise)	141				
Aggregate				4.4084	0.74083

Source own survey; 2022

In this study the adoption and growth of electronic banking technology in Commercial Bank of Ethiopia have the most enormous services benefits like improving customer services, facilitate marketing and marketing access, improving transaction speeds and facilitates the development of new products and new business. This is supported by the evidence of the response of the respondents mean score value were found 4.48, 4.34, 4.41 and 4.41 respectively as portrayed by the above table 4.10. The respondents also were agreed that the adoption and extending of electronic banking technology will overcome geographical limitations i.e. it removes the traditional geographical limitations as it could reach out to customers of dispersed locations and reduce the list of processing orders in the banking hall in the Commercial bank of Ethiopia as their response mean score value were found 4.37 and 4.32 respectively illustrated by the above table 4.10.

Once again, the result described that the large number of respondents were agreed that other service benefits perceived from the adoption and development of electronic-banking in Commercial Bank of Ethiopia is that it increases the accessibility of the bank services to use in terms of time or no time limit to access the bank accounts and information (24 by 7) access i.e. the electronic banking technology system allows an account holder to access and manage bank account and information through their personal computer or mobile phone any time and place. This agreement is supported by the evidence of the response of the respondents mean score value was 4.54.

The result further revealed that the adoption and growth of electronic banking technology in Commercial Bank of Ethiopia will enhance the accessibility of the bank services in terms of place to both existing and new customers. This is evidenced by the response of the respondents as most of the respondents frequency percentage were found (62.9% strongly agree, 28.9% agree please refer the Appendix B). Similarly as answers were found on the open-ended questions electronic banking technology will Publisize the product and also expand customer base and finally it gains interest, will automate saving and fast validation of income payment from buyers or clients, will increase number of customer and attract new business, will help the client by saving time/ unnecessary time usage, will save cost to the client like transport cost, will reduce waiting time to serve non digital customer, will help to reduce cost of the bank intermss of manpower, Since it is international system the bank going to be universally acceptable bank i.e this things going to make it globally competitive, will increase noumber of users and generate

more revenue and also reach easily remote areas and also minimizes number opened branchs at different areas, will improve the digitilization of the banking industry, and finally CBE can get more customer if it creates simple and attractive system and also can get ability to compete with world most known banks.

Lastly but not least, another service benefits of adoption and extending of electronic-banking technology in Commercial Bank Of Ethiopia are encourage price transparency and create better relationship among banks and clients. This is evidenced by the response of the respondents mean score value were found 4.35 and 4.29 respectively as it portrayed in the above table 4.9.

On the other way, the aggregate mean value is 4.40 which represent a high positive response on the level of measurement scale that means, the largest number of study participants agreed on the issue(s) or item(s) presented to them. On the basis the above mean score values of , it is possible to say that:

- ✓ The E-banking system highly helped to improve customer service, improve transaction speed, overcome geographical limitations, reduce queues in the banking hall, access bank account information 24 hours by 7 days, to enhance accessibility of the bank services (in terms of place), and to create better relationship between the bank and clients.
- ✓ The system highly facilitated marketing (market access) and the development of new products and new business in the bank.
- ✓ The system highly encouraged price transparency.

4.6.Driving forces or motives

A total number of 9 questions on driving forces or motives (internal and external motives) for the adoption and extension of electronic banking services in Commercial Bank of Ethiopia were asked to indicate the extent to which each respondent agrees to corresponding close ended statements rated on a five-point Likert type scales ranging from, 1 Strongly Disagree to, 5 Strongly Agree. The summary of the results for all statements or variables under the research study and the result with respect to each statement is indicated below. Accordingly, the researcher tried to interpret the mean values. The researcher also tried to triangulate and complement the results obtained from the open-ended questions and the respective associated other literatures finding

with the results obtained from the likert statements pertaining to similar variables, when found appropriate**.**

4.6.1.Internal motives

Table 4.11 the internal driving forces or motives that initiates Commercial Bank of Ethiopia for adoption and extending of electronic banking technology

Internal Motives	N	Minimum	Maximum	Mean	SD
Commercial Bank of Ethiopia desires to improve customer service	160	2.00	5.00	4.4250	0.72294
CBE wants to build organizational reputation	155	1.00	5.00	4.1806	0.83332
CBE desires to improve organizational performance and productivity	159	2.00	5.00	4.3333	0.77677
CBE wants to reduce transaction cost	155	1.00	5.00	4.1613	0.84886
CBE wants to improve relationship with customers	156	1.00	5.00	4.2115	0.87259
Valid N (listwise)	148				
Aggregate				4.2623	0.81089

Source own survey; 2022

There are factors influencing the adoption and extending of electronic banking technology products in Commercial Bank of Ethiopia. As portrayed in the above table 4.11 indicated that most of the respondents were agreed that the desire to improve customer service and the desire to build organizational reputation were the main factors for the adoption and growth of electronic banking technology, in which the mean score value of the respondents response were found 4.42 and 4.18 respectively.

Moreover, the largest proportion (49.1%strongly agree and 38.4% agree, please refer the Appendix B) of the respondents were also said that the desire to improve organizational

performance and productivity has a strong influence for the adoption and growth of electronic banking technology in Commercial Bank of Ethiopia as the response of the respondents mean score value were found 4.33. Besides, from the open-ended questions respondents including Branch Managers were answered that the Commercial bank of Ethiopia have commenced electronic banking technology services with the reason of existence limited and more complex face to face handling of customers at the branch offices, because of emerging of new technologies and competitors and uses those technologies to acess their customer, because of not only the existence of high competition locally but there exist a potential foreign competitor, to reduce number of customers coming at branch offices, because of CBE wants to be on time and every where, because of CBE emphasise on developing societal economy and development of the country, to develop the habit of saving in the society, to meet customer expectation by making the bank on their hands, because of e-banking now a days becomes one of the standards that CBE should adopt to its structute to become a world class commercial bank, because of it is a customer need and increases accessibility, because of e-banking reduces transportation cost and queues, because of there is changeable E-banking technology environment and new changing financial system, because of CBE has huge number of customers compared to other banks locally, because of e-banking decreases customer interaction with bank teller, because of currently ther is increasing of customer needs and rapidly increasing technology innovation, desire to compute outside country to compete with others, now adays number of customers opening new bank accounts increasing rapidily from day to day; so adopting, spreading and improving electronic banking is mandatory for CBE to make cashless society and to be competent.

Last but not least, other internal driving factors that initiates the Commercial Bank of Ethiopia for the adoption and extending of electronic banking technology are desire to reduce transaction cost and desire to improve relationship with customers that enforce Commercial Bank of Ethiopia to adopt and develop technological innovation. This evidence was supported by the response of the respondents mean score value were found 4.16 and 4.21 respectively.

On the other way, the aggregate mean value is 4.26 which represent a high positive response on the level of measurement scale that means, the largest number of study participants agreed on the issue(s) or item(s) presented to them. On the basis the above mean score values of , it is possible to say that:

- ✓ The bank highly desired to improve customer service, build organizational reputation, improve organizational performance and productivity, reduce transaction cost, and improve relationship with customers.

4.6.2 External Motives

Table 4.12 the external driving forces or motives that initiates Commercial Bank of Ethiopia for adoption and extending of electronic banking technology

External Motives	N	Minimum	Maximum	Mean	SD
Existence of high competition in the banking industry	158	2.00	5.00	4.3924	0.68501
CBE Desires to satisfy rapid change of customer needs and preferences	159	1.00	5.00	4.1195	0.91655
CBE desires to cover wide geographical area	158	2.00	5.00	4.4620	0.71948
Existence of Legal frame works that enforce banks adopt and develop technological innovation	159	1.00	5.00	4.0881	0.92356
Valid N (listwise)	154				
Aggregate				4.2655	0.81115

Source own survey; 2022

There are factors influencing the adoption and extending of electronic banking technology products in Commercial Bank of Ethiopia. As portrayed in the above table 4.12 indicated that most of the respondents were agreed that the existence of high competition in the banking industry and the desire to satisfy rapid change of customer needs and preferences were the main factors for the adoption and growth of electronic banking technology, in which the mean score value of the respondents response were found 4.39 and 4.11 respectively. Besides, from the open-ended questions respondents including Managers were answered that the Commercial bank of Ethiopia have commenced electronic banking technology services was the desire to compete with international banks and lure customers from other local competitive banks who have not introduced.

Moreover, the largest proportion (56.3%strongly agree and 36.7% agree, please refer the Appendix B) of the respondents were also said that the desire to cover wide geographical area has a strong influence for the adoption and growth of electronic banking technology in Commercial Bank of Ethiopia as the response of the respondents mean score value were found 4.46.

Last but not least, other driving factors that initiates the Commercial Bank of Ethiopia for the adoption and extending of electronic banking technology are existence of Legal frame works that enforce Commercial Bank of Ethiopia to adopt and develop technological innovation. This evidence was supported by the response of the respondents mean score value were found 4.08.

On the other way, the aggregate mean value is 4.26 which represent a high positive response on the level of measurement scale that means, the largest number of study participants agreed on the issue(s) or item(s) presented to them. On the basis the above mean score values of , it is possible to say that:

- ✓ The bank highly desired to satisfy rapid change of customer needs and preferences and cover wide geographical area.
- ✓ There existed high competition in the banking industry and legal frame works that enforce banks adopt and develop technological innovation.

4.7.Challenges for the development and Practice of electronic banking technologies in Commercial Bank of Ethiopia

As cited in chapter two, there are so many challenges that negatively affect the adoption and growth of e-banking technology. The factors affecting the successful adoption and growth of new technologies, such as electronic-banking are common in nature. Such as cost factors, security and trust factors and lack of adequate information communication technology infrastructure (particularly in developing countries).

A total of 19 questions on challenges of adopting and extending of electronic-banking technology obtained from different literatures were asked to indicate the extent to which each respondent agrees to corresponding closed ended statements rated on a five-point Likert type scales ranging from 1 “Strongly Disagree” to 5 “Strongly Agree”. Statistical results are presented under each section of the factors considered using the table including the number of

frequencies, the Mean and Standard Deviation of the data points. The "Valid" column shows the number of respondents who provided answer for each corresponding variables. The mean tried to tell the average where the data points fall for each specific variable, while the standard deviation column showed the variability of the data points for each variable under consideration.

Accordingly, the researcher tried to interpret the mean of the data points. The researcher tried to triangulate and complement the results obtained from the close ended questions and open ended questions obtained from the likert scale type statements pertaining to similar variables, when found appropriate.

For analysis purpose the challenges are classified in to organizational, environmental(internal and exeternal) factors. These includes Internal environment factors(Finanacial and Marketing factors and plan and policy factor) and external environment factors(Technological factors, legal factors, political factors, social factors, and economic factors).

4.7.1. Organizational Factors

In this study customer awareness, technical and managerial skill required to implement electronic-banking technology, costs related to implementing and running of electronic-banking technology and resistance to change in technology are considered as organizational factors and the survey results is shown on table 4.13 as follows.

Table 4.13 Organizational factors affecting the adoption and growth of electronic banking in Commercial Bank of Ethiopia

Organizational Challenges	N	Minimum	Maximum	Mean	SD
There is lack of customer awareness with electronic-banking product	160	1.00	5.00	4.2125	0.81176
There is lack of technical and managerial skills in the implementation and development of electronic-banking technology	159	1.00	5.00	3.6792	1.08103
There exist high cost of implementation in the system (such as cost of ICT equipment and network, software and re-	159	1.00	5.00	3.6981	0.99209

organization)					
Existence of resistance to change in technology among by board, top management and staff	160	1.00	5.00	3.5438	1.10372
Valid N (listwise)	158				
Aggregate				3.7834	0.99715

Source own survey; 2022

Table 4.13 indicated that Lack of customer awareness with electronic-banking product provided by Commercial Bank of Ethiopia is considered as a factor that negatively affecting the successful adoption and growth of electronic banking technology as the average results in the likert scale of the respondents is found 4.21. The respondents also were agreed that Lack of technical and managerial skills in implementation and development of electronic-banking technology is the major factor that has a negative influence on the adoption and growth of electronic-banking technology in Commercial Bank of Ethiopia with a mean score value of 3.67. The study further revealed that high cost of implementing of E-banking technology such as cost of ICT equipment and network, software and re-organization and also resistance to change in technology among by board, top management and staff are the major organizational challenge for implementation and growth of E-banking technology in the CBE, in which the mean score value were found 3.69 and 3.54 respectively. Besides, from the open-ended questions respondents including Branch Managers were answered that there are challenges in adopting electronic banking in Commercial bank of Ethiopia; there is lack of awareness from customer side, there is a big challenge of resistance to accept e-banking service and lack of interest or ignorance to accept the system towards the customer i.e. as we all know customers are not easily willing to adopt new technology quickly as possible and they don't trust the technology efficiently, there exist isuues of security and population culture, there exist risk of system hackers, there exist political interference from government, there exist lack of willing to invest on new technologies by top most banking managers, thre exist a problem on customers familiarity with the technology, there exist service usage fee i.e. customers paid when he/she transfers money from one bank to other and withdrawing money from ATM, there exist lack of trust, there exist high intenet cost and low customers educational level, there exist a problem of stack or connection interuption and

usage of old computers both on internet banking and ATM machines, the system is very sensitive to thievery both on internet banking and ATM services, there exist a problem of education for the top leaders including mangers of the organization and also lack of well trained ICT personnels, there exist lack of coordination between decision makers with CBE, there exist fraud in different types of e-banking services, finally there is lack of impressive e-banking policy and also CBE not working deeply on that policy.

In general, the result revealed lack of customer awareness with electronic-banking product and their benefits, lack of technical and managerial skills in implementation and development of electronic-banking technology, high cost of implementation of electronic banking (such as cost of information communication technology, equipment and network, software and re-organization) and resistance to change in technology among by board, top management and staff are considered as organizational factors that hinders Commercial Bank of Ethiopia to adopt and develop electronic-banking technology.

On the other way, the mean value of first, second, and third question are 4.21, 3.67, and 3.69 which represent a high positive response on the level of measurement scale that means, the largest number of study participants agreed on the issue(s) or item(s) presented to them. On the basis the above mean score values of , it is possible to say that:

- ✓ There existed lack of customer awareness with electronic-banking product, lack of technical and managerial skills in the implementation and development of electronic-banking technology, high cost of implementation in the system (such as cost of ICT equipment and network, software and re-organization).

Incontray the mean value fourth question is 3.54 which represent an average neutral response on the level of measurement scale that means, the average number of study participants agreed on the issue(s) or item(s) presented to them. On the basis the above mean score values of , it is possible to say that:

- ✓ There existed resistance to change in technology among by board, top management and staff.

The aggregate mean score value is 3.78 which represent a high positive response on the level of measurement scale that means, the largest number of study participants agreed on the issue(s) or item(s) presented to them.

4.7.2. Environmental Factors

According to Tornatzky and Fleischer (1990) another factors influencing E-Banking technology is environmental factors. The issues raised in this study in relation with environmental factors are finance and markets, plan and policy, infrastructure and computer literacy, regulation and law, role of government, coordination and interaction between stakeholders, and economical factors and the survey result is shown on table below.

4.7.2.1. Financial and marketing Challenges

Table 4.14 Financial and marketing factors affecting the adoption and growth of electronic banking in Commercial Bank of Ethiopia.

Financial and Marketing Challenges	N	Minimum	Maximum	Mean	SD
Absence of financial networks that links different banks with Commercial Bank of Ethiopia	158	1.00	5.00	3.4620	1.09216
There exist lack of audit trial	156	1.00	5.00	3.3013	1.00592
Valid N (listwise)	154				
Aggregate				3.38165	1.04904

Source own survey; 2022

Table 4.14 indicated absence of financial networks that links different banks with Commercial Bank of Ethiopia is considered as a factor that negatively affecting the successful adoption and growth of electronic banking technology as the average results in the likert scale of the respondents is found 3.46.

Moreover, the proportion (14.7%strongly agree and 23.7% agree, please refer the Appendix B) of the respondents were also said that existence of shortage in audit trial has a strong influence

for the adoption and growth of electronic banking technology in Commercial Bank of Ethiopia as the response of the respondents mean score value were found 3.30.

On the other way, the mean value of first and second question are 3.46, and 3.30 which represent an average neutral response on the level of measurement scale that means, an average number of study participants agreed on the issue(s) or item(s) presented to them. On the basis the above mean score values of , it is possible to say that:

- ✓ There existed absence of financial networks that links different banks with Commercial Bank of Ethiopia and lack of audit trial in moderate scale.

The aggregate mean score value is 3.38 which represent an average positive response on the level of measurement scale that means, an average number of study participants agreed on the issue(s) or item(s) presented to them.

4.7.2.2. Plan and policy challnges

Table 4.15 Plan and policy factors affecting the adoption and growth of electronic banking in Commercial Bank of Ethiopia

Plan and Policy Challnges	N	Minimum	Maximum	Mean	SD
Customers are concerned about their private information & security policy	157	1.00	5.00	3.9363	0.91063
There is a user privacy policy mentioned on the website to strengthen trust of customers	159	1.00	5.00	3.9182	0.94781
Valid N (listwise)	156				
Aggregate				3.9272	0.92922

Source own survey; 2022

Table 4.15 indicated that customers focus on their private information and security policy considered as a factor that negatively affecting the successful adoption and growth of electronic banking technology as the average results in the likert scale of the respondents is found 3.93. This result is consistent with the findings of (Okoye, 2013), Ziad et al., (2009), Khalfan et al., (2006) were security risk as hindrance factor for the adoption of E-banking.

Moreover, the proportion (28.9%strongly agree and 43.4% agree, please refer the Appendix B) of the respondents were also said that existence of user privacy policy has a strong influence for the adoption and growth of electronic banking technology in Commercial Bank of Ethiopia as the response of the respondents mean score value were found 3.91.

On the other way, the aggregate mean score value is 3.92 which represent a high positive response on the level of measurement scale that means, the largest number of study participants agreed on the issue(s) or item(s) presented to them. On the basis the above mean score values of , it is possible to say that:

- ✓ There existed customers concern about their private information & security policy and a user privacy policy mentioned on the website to strengthen trust of customers.

4.7.2.3. Technological factors

Even though there are many benefits associated with the adoption of new technology, there are many hindrance technological factors that affect the effective implementation and extending of the technology. The issues raise here in under technological factors were relative disadvantages that hinder Commercial Bank of Ethiopia from the adoption and development of electronic banking technology such as limitation in network infrastructure and internet related services, limitation in ICT infrastructure, existence of frequent power disruption, and existence of relatively high cost of internet and all of the respondents were participated in this study were asked that such factors are considered as challenges that the Commercial Bank of Ethiopia faced while adopting and extending of electronic banking technology and the survey result is shown on table 4.16 as follows.

Table 4.16 Technological factors affecting the adoption and growth of electronic banking technology in Commercial Bank of Ethiopia

Technological Challnges	N	Minimum	Maximum	Mean	SD
There is limitation in network infrastructure and internet related services	160	1.00	5.00	4.1125	0.90413
There is limitation in ICT infrastructure	155	1.00	5.00	4.0129	0.87525

Customers encounter problems related with computer literacy	159	1.00	5.00	4.0252	0.94768
There is frequent power disruption	156	2.00	5.00	3.9423	0.95201
There exist relatively high cost of internet	157	1.00	5.00	3.6624	1.08931
Valid N (listwise)	148				
Aggregate				3.9510	0.95367

Source own survey; 2022

Responses are captured in the above table 4.16 shows that the respondents were asked whether there is limitation in network infrastructure and internet related services that Commercial Bank of Ethiopia provided electronic banking product and services. Hence, the descriptive statistics result gives the mean score value of 4.11, that means the largest number of respondents (38.1%, strongly agree 43.1%, agree, please refer the Appendix B), were agreed that limitation in network infrastructure and internet related services are considered as the challenge for the adoption and development of electronic-banking technology. This result is consistent with the findings reported earlier by OECD (2004) and Wondwossen and Tsegai (2005).

The result further revealed that the respondents were asked whether there is limitation in ICT infrastructure that Commercial Bank of Ethiopia provided electronic banking product and services, hence the descriptive statistics result gives the mean score value of 4.01, that means the largest number of respondents (31.0%, strongly agree 46.5%, agree, please refer the Appendix B), were agreed that limitation in network infrastructure and internet related services are considered as the challenge for the adoption and development of electronic-banking technology.

Lastly but not least, another technological challenges of adoption and extending of electronic-banking technology in Commercial Bank Of Ethiopia are problems related with computer literacy, frequent power disruption, and existence of relatively high cost of internet. This is evidenced by the response of the respondents mean score value were found 4.02, 3.94, and 3.66 respectively as it portrayed in the above table 4.16.

On the other way, the mean value of first, second, third, and fourth question are 4.11, 4.01, 4.02, and 3.94 which represent a high positive response on the level of measurement scale that means,

the largest number of study participants agreed on the issue(s) or item(s) presented to them. On the basis the above mean score values of , it is possible to say that:

- ✓ There existed limitation in network infrastructure and internet related services, limitation in ICT infrastructure, problems related with computer literacy, frequent power disruption

In contrary the mean value of fifth question is 3.66 which represent an average neutral response on the level of measurement scale that means, the average number of study participants agreed on the issue(s) or item(s) presented to them. On the basis the above mean score values of , it is possible to say that:

- ✓ There existed relatively high cost of internet.

The aggregate mean score value is 3.95 which represent a high positive response on the level of measurement scale that means, the largest number of study participants agreed on the issue(s) or item(s) presented to them.

4.7.2.4. Legal Factors

Table 4.17 Legal factors affecting the adoption and growth of electronic banking technology in Commercial Bank of Ethiopia

Legal Challnges	N	Minimum	Maximum	Mean	SD
There is lack of law mandating the bank to adopt electronic-banking technology	156	1.00	5.00	3.5577	1.04258
There is lack of legal framework for electronic-banking	154	1.00	5.00	3.6364	1.09555
Valid N (listwise)	150				
Aggregate				3.5970	1.06906

Source own survey; 2022

Table 4.17 indicated that lack of law mandating the bank to adopt electronic-banking technology with Commercial Bank of Ethiopia is considered as a factor that negatively affecting the successful adoption and growth of electronic banking technology as the average results in the likert scale of the respondents is found 3.55.

Moreover, the proportion (24.7%strongly agree and 34.4% agree, please refer the Appendix B) of the respondents were also said that lack of legal framework for electronic-banking system with Commercial Bank of Ethiopia has a strong influence for the adoption and growth of electronic banking technology in Commercial Bank of Ethiopia as the response of the respondents mean score value were found 3.63.

On the other way, the aggregate mean score value is 3.59 which represent an average neutral response on the level of measurement scale that means, the average number of study participants agreed on the issue(s) or item(s) presented to them. On the basis the above mean score values of , it is possible to say that:

- ✓ There existed lack of law mandating the bank to adopt electronic-banking technology and lack of legal framework for electronic-banking.

4.7.2.5. Political Factors

Table 4.18 Political factors affecting the adoption and growth of electronic banking technology in Commercial Bank of Ethiopia

Political Challenges	N	Minimum	Maximum	Mean	SD
There is lack of sufficient gov't support that affect customers' willingness	153	1.00	5.00	3.6013	1.00878
Valid N (listwise)	153				

Source own survey; 2022

Responses are captured in the above table 4.18 shows that the respondents were asked whether there is lack of sufficient gov't support in Commercial Bank of Ethiopia when providing electronic banking product and services. Hence, the descriptive statistics result gives the mean score value of 3.60, that means the largest number of respondents (20.3%, strongly agree 36.6%, agree, please refer the Appendix B), were agreed that lack of sufficient gov't support are considered as the political challenge for the adoption and development of electronic-banking technology.

On the other way, the mean value of first question is 3.60 which represent an average neutral response on the level of measurement scale that means, the average number of study participants

agreed on the issue(s) or item(s) presented to them. On the basis the above mean score values of , it is possible to say that:

- ✓ There existed lack of sufficient gov't support that affect customers' willingness.

4.7.2.6. Social Factors

Table 4.19 Social factors affecting the adoption and growth of electronic banking technology in Commercial Bank of Ethiopia

Social Challnges	N	Minimum	Maximum	Mean	SD
There is lack of adequate coordination, interaction and cooperation between Commercial Bank of Ethiopia and other decision making centers in electronic-banking technology	160	1.00	5.00	3.6375	1.01242
There is lack of trust by users in electronic-banking technology provided by Commercial Bank of Ethiopia	159	1.00	5.00	3.7170	1.10311
Valid N (listwise)	159				
Aggregate				3.6772	1.05776

Source own survey; 2022

Table 4.19 indicated that lack of adequate coordination, interaction and cooperation between Commercial Bank of Ethiopia and other decision making centers in electronic-banking technology is considered as a factor that negatively affecting the successful adoption and growth of electronic banking technology as the average results in the likert scale of the respondents is found 3.63.

Moreover, the proportion (20.0%strongly agree and 41.9% agree, please refer the Appendix B) of the respondents were also said that lack of trust by users in electronic-banking technology provided by Commercial Bank of Ethiopia has a strong influence for the adoption and growth of

electronic banking technology in Commercial Bank of Ethiopia as the response of the respondents mean score value were found 3.71. This result is in line with the finding of Ziad et al., (2009) where lack of confidence in service providers is cognitive hindrance in adoption of ecommerce. According to Delali (2010) consumer's 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.

On the other way, the mean score value of first question is 3.63 which represent an average response on the level of measurement scale that means, the average number of study participants agreed on the issue(s) or item(s) presented to them. On the basis the above mean score values of , it is possible to say that:

- ✓ There existed lack of adequate coordination, interaction and cooperation between Commercial Bank of Ethiopia and other decision making centers in electronic-banking technology.

In contrary, the mean score value of second question is 3.71 which represent a high positive response on the level of measurement scale that means, the largest number of study participants agreed on the issue(s) or item(s) presented to them. On the basis the above mean score values of , it is possible to say that:

- ✓ There existed lack of trust by users in electronic-banking technology provided by Commercial Bank of Ethiopia.

The aggregate mean score value is 3.67 which represent a high positive response on the level of measurement scale that means, the largest number of study participants agreed on the issue(s) or item(s) presented to them.

4.7.2.7. Economic Challenges

Table 4.20 Economic factors affecting the adoption and growth of electronic banking technology in Commercial Bank of Ethiopia

Economic Challenges	N	Minimum	Maximum	Mean	SD
There is tight foreign currency regulation	154	1.00	5.00	3.8247	0.97104
Valid N (listwise)	154				

Source own survey; 2022

Responses are captured in the above table 4.20 shows that the respondents were asked whether there is tight foreign currency regulation when providing electronic banking product and services. Hence, the descriptive statistics result gives the mean score value of 3.82, that means the largest number of respondents (27.3%, strongly agree 38.3%, agree, please refer the Appendix B), were agreed that existence of tight foreign currency regulation are considered as the political challenge for the adoption and development of electronic-banking technology.

On the other way, the mean value of first question is 3.82 which represent a high positive response on the level of measurement scale that means, the largest number of study participants agreed on the issue(s) or item(s) presented to them. On the basis the above mean score values of , it is possible to say that:

- ✓ There existed tight foreign currency.

4.8.Opportunities for the adoption and growth ofelectronic banking technology in Commercial Bank of Ethiopia

Table 4.21 Opportunities for the adoption and growth of electronic banking technology in Commercial Bank of Ethiopia

Opportunities	N	Minimum	Maximum	Mean	SD
E-banking creates opportunity for Late adopters to improve their habits	160	2.00	5.00	4.1750	0.78947
E-banking creates rapid growth of mobile user in the country	155	2.00	5.00	4.2194	0.82392
E-banking creates existence of high demand for various employees to pay	159	2.00	5.00	4.2390	0.75018

via the system					
E-banking initiates existence of competition in the banking industry	156	1.00	5.00	4.3654	0.73692
E-banking creates improvement in the banking habit of the society	155	2.00	5.00	4.2839	0.72752
E-banking creates commitment of the government to strengthen the banking industry	159	2.00	5.00	4.1132	0.84928
E-banking creates commitment of the government to facilitate the expansion of ICT infrastructure	160	1.00	5.00	4.2125	0.82712
Valid N (listwise)	145				
Aggregate				4.2297	0.78634

Source own survey; 2022

Respondents were asked whether they strongly agreed, agreed, neutral, disagreed or strongly disagree based on the five questions displayed in the table 4.20 above to confirm the existence of the opportunities for the adoption and development of electronic banking technology in Commercial Bank of Ethiopia. Accordingly, most of the sampled respondents were agreed with the idea that late adopter's opportunities, rapid growth of mobile user in the country and the existence of high demand are the main opportunities for the adoption and development of electronic banking technology with the mean score value were found 4.17, 4.21 and 4.23 respectively as depicted in the above table 4.20.

Once again, the result described that existence of competition in the banking industry was another existing opportunities for the Commercial Bank of Ethiopia to adopt and extending of electronic banking technology as the largest number of the respondents response frequency percentage were found (48.7% strongly agree, 41.7% agree please refer the Appendix B). Besides, from the open-ended questions respondents including Branch Managers were answered that adopting of electronic banking technology in Commercial bank of Ethiopia have come with different opportunities such as; the sytem will increase usage of smartphone with respect to

customers, It increases awareness level of customers, foreign banks are on the near future to join the market and hence CBE need to maintain its customer base with such electronic option before foreign banks do, it creates job opportunities, it increases modernized number of population, increases service excellence of ethio telecom, increases number of educated people, increases number of mobile users, it is an esfficient way of saving money and time and also expanded technological services in the country, it encourages global citizenship .i.e. now a days everything is coonected to technology sp does this helps to be competitive on the world, it digitalize customers life, it helps to facilitate countries economy, it creates an opportunity for customers like to have different CBE account and we can access them using only one mobile number and phone and using this way we can use and transfer our money anywhere and anytime, it increases customer satisfaction, it is an opportunity for around 50 % of our population which are not familiar with the system, it encourages rapid growth of banking industry and completion between banks, it creates an opportunity to improve weaknesses of people and even organizations. Finally it creates opportunity for foreign service providers in telecommunication industry that to invest in our country.

Furthermore, the result revealed that improvement in the banking habit of the society, commitment of the government to strengthen the banking industry and commitment of the government to facilitate the expansion of information communication technology infrastructure were the existing opportunities for the Commercial Bank of Ethiopia to adopt and growth of electronic banking technology services. This evidence is supported by the response of the respondents mean score value were found 4.28, 4.11 and 4.21 respectively as illustrated by the above table 4.20.

On the other way, the aggregate mean score value is 4.22 which represent a high positive response on the level of measurement scale that means, the largest number of study participants agreed on the issue(s) or item(s) presented to them. On the basis the above mean score values of , it is possible to say that:

- ✓ The E-banking system highly created opportunity for Late adopters to improve their habits, rapid growth of mobile user in the country, existence of high demand for various employees to pay via the system, improvement in the banking habit of the society, commitment of the government to strengthen the banking industry, commitment of the

government to facilitate the expansion of ICT infrastructure, and initiated existence of competition in the banking industry.

4.9. Discussion of the study

According to Cobb (2005), electronic payments have a significant number of economic benefits apart from their convenience and safety and these benefits when maximized can go long way in contributing immensely to economic development of the country. Same was supported by Cobb (2005) in which E- payments have a significant number of economic benefits apart from their convenience and safety and these benefits when maximized can go a long way in contributing immensely to economic development of a nation.

According to NBE Quarterly Bulletin (2015), the Ethiopian Banking industry as a whole had a network of 2,693 branches as of June 30, 2015 where such status is too far behind to meet the demand of the existing unbanked population size in Ethiopia (total bank branches to population is 33,448). The bricks and mortar approach (Traditional Banking) requires expensive investment and not economically feasible for financial institution. Otherwise, financial inclusion would be a nightmare in Ethiopia unless banks should make strategic shift to alternative channels like E-Banking. Thus, respondents' of this study supported such idea and that is why several banks are now trying to manage to get on board of the E-banking business. Since ''Electronic payment systems can help the unbanked join the banking system with significant benefits to them and to the societies in which they live'' (Commonwealth Business Council & Visa, 2004).

Hence, the adoption and growth of electronic banking technology is used as a defensive mechanism against competitive activities. This result is in line with the finding of (Isaac 2005).

In Ethiopia the banking sector practices and development face very several challenges to fully adopt electronic payment mechanisms. Research studied by Gardachew (2010) identified the following challenges that Ethiopian commercial banks faces.

- ✓ Low level of internet penetration and poor telecommunication infrastructure.
- ✓ Lack of suitable legal and regulatory frameworks for e-commerce and e-payments.
- ✓ Political instabilities in neighboring countries- there is no peace in the horn of Africa such as in south Sudan, Somalia and Eritrea etc.
- ✓ High illiteracy rates- most of Ethiopians especially in rural areas are illiterate and they

have no knowhow about how to use electronic banking services.

- ✓ High cost of internet- the cost of entry in to the e-commerce market is higher. These include high startup costs, high computer costs and telecommunication and licensing requirements.
- ✓ Absence and shortage of financial networks that links one bank with other bank.
- ✓ Frequent power interruption- lack of reliable power supply is also a key challenge in Ethiopia.

Most cited organizational factors in the different literature are; information technology users; community; organizational structure; firm process; firm size; technological capabilities of the organization's member; the technological and financial resources available; process of selecting and implementing the information technology; management backing and support for the project (Harrison,2012).

The finding is in line with Vaithianathan, S. (2010) and Angelakopoulos and Mihiotis (2011) in which all indicted that, the non- familiarity with E-banking technology products and services by customers is the main factor that has a negative influence on the adoption and growth of E-banking technology. The respondents of this were agreed that Lack of technical and managerial skills in implementation and development of electronic-banking technology is the major factor that has a negative influence on the adoption and growth of electronic-banking technology in Commercial Bank of Ethiopia with a mean score value of 3.67. Also 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.

This study further revealed that 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 the CBE, in which the mean score valur were found 3.69. This is in line with finding of OECD (2004) where high cost of implementation in the electronic banking system (such as cost of ICT equipment and network, software and re-organization) is a factor that hinders the adoption of electronic-banking technology.

CHAPTER FIVE

5. SUMMARY OF THE FINDINGS, CONCLUSION AND RECOMMENDATIONS

This chapter had present summary of the findings and conclusions in section 5.1 and 5.2 respectively. Afterwards, the possible important recommendations and suggestions were given in section 5.3.

5.1. Summary of the Findings

Based on the data analysis the major findings are summarized as follows

A total of 183 questionnaires were distributed but 160 questioners were filled and returned. Among the total population 62.5% of the respondents are male and 37.5% of the respondents are female. 53.1% of respondents are between the age of 21 and 30, 38% of the respondents are between the age of 31 and 40 and 8.8% of the total respondents are above the age of 41. 0% of respondents have Diploma, 60.6% of respondents have a bachelor's degree and 39.4% of the total respondents have master's degree. 5.6% of respondents are branch managers, 16.9% of respondents are business managers, 20% of respondents are senior officers, 37.5% of respondents are banking business/banking operation and customer service officers, 14.4% of respondents are junior officers, 1.9% of respondents are bank trainees, digital officer, customer relation officer, management trainee and system administrator positions have amounts approximately 0.6%, and 1.3% of the total respondents are IT Officers. 23.1% of respondents have got salary between 5001-10000 ETB, 38.8% of respondents have got a salary between 10001-15000 ETB, and 38.1% of the total participants have got a salary of 15000 and above. 23.1% of the respondents had an experience of between 0-3 years, 35.6% of the respondents have between 4-6 years of experience, 16.9% of the respondents had an experience of between 7-9 years and 24.4% of the total respondents had an experience of above ten years.

To achieve the proposed objective conceptual frame works were used; organizational, and environmental challenges. This means, based on the research model the study employed two independent variables called organizational and environmental factors. On the other hand, the study used both quantitative and qualitative (mixed) approach.

Organizational challenges: lack of customer awareness with E- banking product, lack of technical and managerial skills in the implementation and development of electronic banking technology, high cost of implementation in the system (such as cost of ICT equipment and network, software and re-organization), and existence of resistance to change in technology among by board, top management and staff.

Environmental challenges: Absence of financial networks that links different banks with Commercial Bank of Ethiopia, lack of audit trial, Customers are concerned about their private information & security policy, There is a user privacy policy mentioned on the website to strengthen trust of customers, limitation in network infrastructure and internet related services, limitation in ICT infrastructure, Customers encounter problems related with computer literacy, frequent power disruption, lack of law mandating the bank to adopt electronic- banking technology, lack of legal framework for electronic-banking, lack of sufficient gov't support affect customers' willingness, lack of adequate coordination, interaction and cooperation between Commercial Bank of Ethiopia and other decision making centers in electronic-banking technology, lack of trust by users in electronic-banking technology provided by Commercial Bank of Ethiopia, existence of tight foreign currency regulation.

Based on the mean analysis, the major challenges of the study are expressed in descending order, i.e. from largest to smallest mean score value: technological challenges with mean score value 3.94, plan and policy challenges with mean score value 3.92, economic challenges with mean score value 3.82, organizational challenges with mean score value 3.77, social challenges with mean score value 3.67, political challenges with mean score value 3.60, legal challenges with mean score value 3.59, and financial and marketing challenges with mean score value 3.38.

5.2. Conclusion

The finding of the study revealed that electronic-banking technology enhances the development of the banking system, and it is considered as a strategic weapon for the banks. Thus, the adoption and extension of electronic-banking technology in Commercial Bank of Ethiopia stretches wide across the two extremes of the challenges and prospects where the concert efforts by stakeholders to overcome the challenges will bring about immense opportunities to the major stakeholders in the field with ultimate results of transforming the country towards financial inclusion.

Based on the descriptive analysis and the result of the study, a number of conclusions can be drawn.

The adoption and development of electronic banking technology in Commercial Bank of Ethiopia have its own challenges. The study showed that lack of customer awareness, lack of technical and managerial skills, high cost of ICT equipment and network, software and re-organization, and resistance to change in technology were the main challenges that Commercial Bank of Ethiopia facing for the adoption and extension of electronic-banking technology. This challenges found to be hinder the technological development rate.

Absence of financial networks, lack of audit trial, private information and and security, and user privacy policy were considerd as the basic internal environmental challenges facing Commercial Bank of Ethiopia to adopt and develop electronic-banking technology.

Furthermore, limitation in network infrastructure and internet related support services, low level of ICT infrastructure, low levels of computer literacy by customers, frequent power disruption, relatively high cost of internet, lack of law mandating the bank to adopt e-banking technology, and lack of legal framework were considered as the basic external challenges facing Commercial Bank of Ethiopia to adopt and develop electronic-banking technology. Besides, lack of sufficient government support, lack of adequate cooperation between Comercial Bank of Ethiopia and other decision making centers were other external challenges faced by Commercial Bank of Ethiopia in adoption and extending of electronic-banking technology.

Therefore, from the above discussion it is possible to conclude that electronic-banking technology is not well developed in Commercial Bank of Ethiopia particularily Nifas Silk district.

Despite the above challenges of adopting and developing electronic-banking technology in Commercial Bank of Ethiopia it has its own several benefits:- potential operational efficiency benefits of electronic-banking adoption and development as perceived by Commercial Bank of Ethiopia are: increase productivity, reduces paper work, reduce transaction cost, generate foreign currency, increase reliability and reducing errors. Moreover, CBE realized service benefits like facilitate the development of new products and services, facilitate marketing and marketing access, improve customer service, reduce long queues in banking hall, increase the accessibility of banking services and encourage price transparency. Perceiving both operational and service benefits have a positive tendency to adopt and develop electronic-banking technology by Commercial Bank of Ethiopia.

Furthermore, there are internal and external driving forces that initiate Commercial Bank of Ethiopia for the adoption and development of electronic-banking technology: potential internal motives of electronic-banking adoption and development as perceived by Commercial Bank of Ethiopia are: desire to improve customer service, desire to build organizational reputation, desire to improve organizational performance, desire to reduce transaction cost, and desire to improve relationship with customers. Additionally, CBE reliazed external motives like existence of high competition, desires to satisfy rapid change of customer needs and preferences, desires to cover wide geographical area, and existence of legal frame works that enforce banks adopt and develop technological innovation.

Finally, attempt was made to see if there were any associated opportunities for the adoption and extending of electronic-banking technology in Commercial Bank of Ethiopia. Accordingly rapid growth of mobile user in the country, existence of competition in the banking industry, existence of high demand, improvement in the banking habit of the society, late adoption of electronic-banking technology, commitment of the government to facilitate the expansion of ICT infrastructure and commitment of the government to strength the banking industry were good opportunities for the adoption and development of electronic-banking services in Commercial Bank of Ethiopia.

5.3. Recommendations

Based on the findings of study the researcher recommended the following basic ideas:

- ✓ Commercial Bank of Ethiopia should create deep awareness to the community concerning the electronic-banking products it offers and the benefits associated with electronic-banking services through advertising their products and services on the internet(social medial), mass media as well as through organizing public exhibitions and talk shows. Besides, the bank should attract the community to use technology by diverse incentive campaigns. In this way customers interest would be aroused.
- ✓ Commercial Bank of Ethiopia should work to improve customers' confidence by providing adequate security of transaction back up of critical data files and alternative means of processing information.
- ✓ The commercial Bank of Ethiopia should educate and inform the community on the workability and effectiveness of electronic-banking technology. This would increase the customer confidence levels.
- ✓ Commercial Bank of Ethiopia should facilitate proper continuous training courses for its employees to have adequate understanding of electronic-banking technology so as to achieve the desired objectives.
- ✓ The Commercial Bank of Ethiopia should facilitate the development of ICT equipment and network, software and re-organization for the successful implementation and development of electronic banking service; and
- ✓ The Central Bank should issue suitable legal frameworks for the adoption of the electronic-banking technology.

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Appendix A (Questionnaire)

St. Mary's University

School of Graduate Studies

Masters of Business Adminstration Program (MBA General)

Research Questionnaire

Dear Sir/Madam

I am Kibrom Berhe, MBA. student in Masters of Business Administration Department at St Marry University. I am undertaking a research on the topic entitled as "**challenges and opportunities of electronic banking in Ethiopian banking industry; in the case of Commercial Bank of Ethiopia**" for the fulfillment of the requirements of the Master's degree in Business Administration. The aim of this questionnaire is to identify the challenges and opportunities of adopting and developing electronic banking in Commercial Bank of Ethiopia.

The results of the study will have an importance to the institutions, to customers, to policy makers, to the future researchers and to others.

I assure you that the information you provide will be used only for academic purposes. Your participation in this study is regarded as a great input to the quality of this study. Your honest and truthful response is necessary.

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

Your faithfully,

Kibrom berhe

Telephone 0930805033

Part I – General Information

1. Sex

A. Male B. Female

2. Age

A. 21 – 30 B. 31 – 40 C. 41 and greater

3. Educational qualifications

A. Diploma B. BA Degree C. MA degree and above

4. Your position in the bank

A. Branch manager B. Business/operation/internal control manager C. Senior Banking Business Officer(SBBO) D.Banking Business Officer/BBO/, Banking Operation Officer /BBO/, Customer Service Officer/CSO/ E. Junior Officer F. If others please specify

5. What type electronic banking services does the bank provide to its customers?

A. Mobile Banking

B. CBE-BIRR

C. Credit cards

D. ATM

E. Point of sale terminal

F. Cardless Banking

G. All

H. If others please specify

6. Monthly salary in Ethiopian Birr

A. 3000 – 5000 B. 5001 – 10,000 C. 10,001 – 15,000 D. 15,001 and above

7. Total work experience in the organization

A. 0 – 3 B. 4 – 6 C. 7 – 9 D. 10 and above

Part II. Questions regarding Elecrtonic - banking challenges and opportunities

Below are list of questionnaries related to adoption of electronic-banking. Please indicate whether you agree or disagree with each ststement by ticking (✓) on the space that specify your choice from the following options.

Key

SA = Strongly Agree A = Agree N = Neutral D = Disagree SD = Strongly Disagree

Benefits	**S.N**	**1) The following are some of the benefits that Commercial Bank of Ethiopia realized from the adoption of electronic-banking system, please indicate your choice.**	**SA**	**A**	**N**	**D**	**SD**
Operational Benefits	1.1	E-banking system helps to reduce paper work					
	1.2	It helps to lower transaction cost					
	1.3	It helps to enhance productivity in the bank					
	1.4	It supports to enhance foreign currency generation					
	1.5	It helps to increase reliability and reducing of errors					
Services Benefits	1.6	It patronize to improve customer service					
	1.7	Facilitates marketing and market access					
	1.8	It patronize to Improve transaction speed					
	1.9	It facilitates the development of new products and new business in Commercial Bank of Ethiopia					
	1.10	It helps to overcome geographical limitations					

	1.11	It helps to reduce queues in the banking hall					
	1.12	It helps to access bank account information 24 hours by 7 days					
	1.13	It supports to enhance accessibility of the bank services (in terms of place)					
	1.14	It encourages price transparency					
	1.15	It helps to create better relationship between the bank and clients					

Please kindly state any other benefits that Commercial Bank of Ethiopia gained from the adoption and introduction of electronic-banking systems in the delivery of customer service?

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Driving Forces	**S.N**	**2) Do you think that the following are the motives or driving forces for Commercial Bank of Ethiopia to introduce and expand electronic-banking services?**	**SA**	**A**	**N**	**D**	**SD**
Internal Motives	2.1	Commercial Bank of Ethiopia desires to improve customer service					
	2.2	CBE wants to build organizational reputation					
	2.3	CBE desires to improve organizational performance and productivity					

	2.4	CBE wants to reduce transaction cost					
	2.5	CBE wants to improve relationship with customers					
External Motives	2.6	Existence of high competition in the banking industry					
	2.7	CBE Desires to satisfy rapid change of customer needs and preferences					
	2.8	Desire to cover wide geographical area					
	2.9	Existence of Legal frame works that enforce banks adopt and develop technological innovation.					

Please kindly state any other deriving forces for the adoption electronic banking in to Commercial Bank of Ethiopia?

_____

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Factors	**S.N**	**3) Please indicate the extent you agree or disagree of the potential challenges that affect the adoption and development of electronic-banking technologies in Commercial Bank of Ethiopia**	**SA**	**A**	**N**	**D**	**S D**
Organizational Factors	3.1	There is lack of customer awareness with electronic-banking product					

	3.2	There is lack of technical and managerial skills in the implementation and development of electronic-banking technology					
	3.3	There exist high cost of implementation in the system (such as cost of ICT equipment and network, software and re- organization					
	3.4	Existance of resistance to change in technology among by board, top management and staff					
Financial and Marketing Challenges	3.5	Absence of financial networks that links different banks with Commercial Bank of Ethiopia					
	3.6	There exixst lack of audit trial					
Plan and policies	3.7	Customers are concerned about their private information & security policy					
	3.8	There is a user privacy policy mentioned on the website to strengthen trust of customers					
Technological Challenges	3.9	There is limitation in network infrastructure and internet related services					
	3.10	There is limitation in ICT infrastructure					
	3.11	Customers encounter problems related					

		with computer literacy					
	3.12	There is frequent power disruption					
	3.13	There exist relatively high cost of internet					
Legal Challenges	3.14	There is lack of law mandating the bank to adopt electronic- banking technology					
	3.15	There is lack of legal framework for electronic-banking					
Political Challenges	3.16	There is lackof sufficient gov't support affect customers' willingness					
Social Challenges	3.17	There is lack of adequate coordination, interaction and cooperation between Commercial Bank of Ethiopia and other decision making centers in electronic-banking technology					
	3.18	There is lack of trust by users in electronic-banking technology provided by Commercial Bank of Ethiopia					
Political Challenges	3.19	There is tight foreign currency regulation					

Please kindly state any other challenges that Commercial Bank of Ethiopia faces in the adoption and development of electronic banking?

_____

_____

_____

Factors	S.N	4) Indicate whether the following are the existing opportunities in the country that initiates the adoption of electronic-banking technology in Commercial Bank of Ethiopia.	SA	A	N	D	SD
Opportunities	4.1	E-banking creates opportunity for Late adopters to improve their habits					
	4.2	E-banking creates rapid growth of mobile user in the country					
	4.3	E-banking creates existence of high demand for various empoyees to pay via the system					
	4.4	E-banking initiates existence of competition in the banking industry					
	4.5	E-banking creates improvement in the banking habit of the society					
	4.6	E-banking creates commitment of the government to strengthen the banking industry					
	4.7	E-banking creates commitment of the government to facilitate the expansion of ICT infrastructure					

Please kindly state any other opportunities in the country that initiates the adoption of electronic-banking technology by Commercial Bank of Ethiopia?

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Appendix B (Survey Data)

Percentage frequency tables

Q1.1_ E-banking system helps to reduce paper work.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	2	1.3	1.3	1.3
Neutral	2	1.3	1.3	2.5
Agree	32	20.0	20.0	22.5
Strongly Agree	124	77.5	77.5	100.0
Total	160	100.0	100.0	

Q1.2_ It helps to lower transaction cost.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	3	1.9	1.9	1.9
Disagree	5	3.1	3.1	5.0
Neutral	8	5.0	5.0	10.0
Agree	45	28.1	28.1	38.1
Strongly Agree	99	61.9	61.9	100.0
Total	160	100.0	100.0	

Q1.3_ It helps to enhance productivity in the bank.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	1	0.6	0.6	0.6
Neutral	3	1.9	1.9	2.5
Agree	46	28.8	28.9	31.4
Strongly Agree	109	68.1	68.6	100.0
Total	159	99.4	100.0	
Missing	1	0.6		
System Total	160	100.0		

Q1.4_ It supports to enhance foreign currency generation.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	2	1.3	1.3	1.3
Disagree	5	3.1	3.2	4.5
Neutral	35	21.9	22.6	27.1
Agree	56	35.0	36.1	63.2
Strongly Agree	57	35.6	36.8	100.0
Total	155	96.9	100.0	
Missing	5	3.1		
System Total	160	100.0		

Q1.5_ It helps to increase reliability and reducing of errors.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	5	3.1	3.2	3.2
Disagree	8	5.0	5.1	8.2
Neutral	21	13.1	13.3	21.5
Agree	59	36.9	37.3	58.9
Strongly Agree	65	40.6	41.1	100.0
Total	158	98.8	100.0	
Missing	2	1.3		
System Total	160	100.0		

Q1.6_ It patronize to improve customer service.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	1	0.6	0.6	0.6
Neutral	13	8.1	8.3	9.0
Agree	51	31.9	32.7	41.7
Strongly Agree	91	56.9	58.3	100.0
Total	156	97.5	100.0	
Missing	4	2.5		
System Total	160	100.0		

Q1.7_ Facilitates marketing and market access.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	2	1.3	1.3	1.3
Disagree	2	1.3	1.3	2.5
Neutral	10	6.3	6.3	8.9
Agree	69	43.1	43.7	52.5
Strongly Agree	75	46.9	47.5	100.0
Total	158	98.8	100.0	
Missing	2	1.3		
System Total	160	100.0		

Q1.8_ It patronize to Improve transaction speed.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	5	3.1	3.2	3.2
Neutral	11	6.9	7.0	10.1
Agree	55	34.4	34.8	44.9
Strongly Agree	87	54.4	55.1	100.0
Total	158	98.8	100.0	
Missing	2	1.3		
System Total	160	100.0		

Q1.9_ It facilitates the development of new products and new business in Commercial Bank of Ethiopia.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	0.6	0.6	0.6
Disagree	3	1.9	1.9	2.5
Neutral	11	6.9	6.9	9.4
Agree	58	36.3	36.5	45.9
Strongly Agree	86	53.8	54.1	100.0
Total	159	99.4	100.0	
Missing	1	0.6		
System Total	160	100.0		

Q1.10_ It helps to overcome geographical limitations.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	6	3.8	3.8	3.8
Neutral	11	6.9	7.0	10.8
Agree	58	36.3	36.7	47.5
Strongly Agree	83	51.9	52.5	100.0
Total	158	98.8	100.0	
Missing	2	1.3		
System Total	160	100.0		

Q1.11_ It helps to reduce queues in the banking hall.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	4	2.5	2.6	2.6
Neutral	15	9.4	9.8	12.4
Agree	62	38.8	40.5	52.9
Strongly Agree	72	45.0	47.1	100.0
Total	153	95.6	100.0	
Missing	7	4.4		
System Total	160	100.0		

Q1.12_ It helps to access bank account information 24 hours by 7 days.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	1	0.6	0.6	0.6
Neutral	11	6.9	6.9	7.5
Agree	48	30.0	30.0	37.5
Strongly Agree	100	62.5	62.5	100.0
Total	160	100.0	100.0	

Q1.13_ It supports to enhance accessibility of the bank services (in terms of place).

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	3	1.9	1.9	1.9
Neutral	10	6.3	6.3	8.2
Agree	46	28.8	28.9	37.1
Strongly Agree	100	62.5	62.9	100.0
Total	159	99.4	100.0	
Missing	1	0.6		
System Total	160	100.0		

Q1.14_ It encourages price transparency.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	1	0.6	0.6	0.6
Neutral	20	12.5	12.7	13.3
Agree	59	36.9	37.3	50.6
Strongly Agree	78	48.8	49.4	100.0
Total	158	98.8	100.0	
Missing	2	1.3		
System Total	160	100.0		

Q1.15_ It helps to create better relationship between the bank and clients.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	0.6	0.6	0.6
Disagree	5	3.1	3.2	3.9
Neutral	17	10.6	11.0	14.8
Agree	57	35.6	36.8	51.6
Strongly Agree	75	46.9	48.4	100.0
Total	155	96.9	100.0	
Missing	5	3.1		
System Total	160	100.0		

Q2.1_ Commercial Bank of Ethiopia desires to improve customer service.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	3	1.9	1.9	1.9
Neutral	13	8.1	8.1	10.0
Agree	57	35.6	35.6	45.6
Strongly Agree	87	54.4	54.4	100.0
Total	160	100.0	100.0	

Q2.2_ CBE wants to build organizational reputation.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	2	1.3	1.3	1.3
Disagree	4	2.5	2.6	3.9
Neutral	18	11.3	11.6	15.5
Agree	71	44.4	45.8	61.3
Strongly Agree	60	37.5	38.7	100.0
Total	155	96.9	100.0	
Missing	5	3.1		
System Total	160	100.0		

Q2.3 CBE desires to improve organizational performance and productivity.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	5	3.1	3.1	3.1
Neutral	15	9.4	9.4	12.6
Agree	61	38.1	38.4	50.9
Strongly Agree	78	48.8	49.1	100.0
Total	159	99.4	100.0	
Missing	1	0.6		
System Total	160	100.0		

Q2.4 CBE wants to reduce transaction cost.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	0.6	0.6	0.6
Disagree	4	2.5	2.6	3.2
Neutral	27	16.9	17.4	20.6
Agree	60	37.5	38.7	59.4
Strongly Agree	63	39.4	40.6	100.0
Total	155	96.9	100.0	
Missing	5	3.1		
System Total	160	100.0		

Q2.5_ CBE wants to improve relationship with customers.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	0.6	0.6	0.6
Disagree	8	5.0	5.1	5.8
Neutral	16	10.0	10.3	16.0
Agree	63	39.4	40.4	56.4
Strongly Agree	68	42.5	43.6	100.0
Total	156	97.5	100.0	
Missing	4	2.5		
System Total	160	100.0		

Q2.6_ Existence of high competition in the banking industry.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	2	1.3	1.3	1.3
Neutral	12	7.5	7.6	8.9
Agree	66	41.3	41.8	50.6
Strongly Agree	78	48.8	49.4	100.0
Total	158	98.8	100.0	
Missing	2	1.3		
System Total	160	100.0		

Q2.7 CBE Desires to satisfy rapid change of customer needs and preferences.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	2	1.3	1.3	1.3
Disagree	6	3.8	3.8	5.0
Neutral	28	17.5	17.6	22.6
Agree	58	36.3	36.5	59.1
Strongly Agree	65	40.6	40.9	100.0
Total	159	99.4	100.0	
Missing	1	0.6		
System Total	160	100.0		

Q2.8_ CBE desires to cover wide geographical area.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	5	3.1	3.2	3.2
Neutral	6	3.8	3.8	7.0
Agree	58	36.3	36.7	43.7
Strongly Agree	89	55.6	56.3	100.0
Total	158	98.8	100.0	
Missing	2	1.3		
System Total	160	100.0		

Q2.9_ Existence of Legal frame works that enforce banks adopt and develop technological innovation.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	3	1.9	1.9	1.9
Disagree	7	4.4	4.4	6.3
Neutral	22	13.8	13.8	20.1
Agree	68	42.5	42.8	62.9
Strongly Agree	59	36.9	37.1	100.0
Total	159	99.4	100.0	
Missing	1	0.6		
System Total	160	100.0		

Q3.1_ There is lack of customer awareness with electronic-banking product.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	0.6	0.6	0.6
Disagree	6	3.8	3.8	4.4
Neutral	15	9.4	9.4	13.8
Agree	74	46.3	46.3	60.0
Strongly Agree	64	40.0	40.0	100.0
Total	160	100.0	100.0	

Q3.2_ There is lack of technical and managerial skills in the implementation and development of electronic-banking technology.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	6	3.8	3.8	3.8
Disagree	22	13.8	13.8	17.6
Neutral	24	15.0	15.1	32.7
Agree	72	45.0	45.3	78.0
Strongly Agree	35	21.9	22.0	100.0
Total	159	99.4	100.0	
Missing	1	0.6		
System Total	160	100.0		

Q3.3_ There exist high cost of implementation in the system (such as cost of ICT equipment and network, software and re- organization.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	2	1.3	1.3	1.3
Disagree	19	11.9	11.9	13.2
Neutral	40	25.0	25.2	38.4
Agree	62	38.8	39.0	77.4
Strongly Agree	36	22.5	22.6	100.0
Total	159	99.4	100.0	
Missing	1	0.6		
System Total	160	100.0		

Q3.4_ Existence of resistance to change in technology among by board, top management and staff.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	7	4.4	4.4	4.4
Disagree	22	13.8	13.8	18.1
Neutral	42	26.3	26.3	44.4
Agree	55	34.4	34.4	78.8
Strongly Agree	34	21.3	21.3	100.0
Total	160	100.0	100.0	

Q3.5_ Absence of financial networks that links different banks with Commercial Bank of Ethiopia.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	8	5.0	5.1	5.1
Disagree	23	14.4	14.6	19.6
Neutral	42	26.3	26.6	46.2
Agree	58	36.3	36.7	82.9
Strongly Agree	27	16.9	17.1	100.0
Total	158	98.8	100.0	
Missing	2	1.3		
System Total	160	100.0		

Q3.6_ There exist lack of audit trial.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	3	1.9	1.9	1.9
Disagree	30	18.8	19.2	21.2
Neutral	63	39.4	40.4	61.5
Agree	37	23.1	23.7	85.3
Strongly Agree	23	14.4	14.7	100.0
Total	156	97.5	100.0	
Missing	4	2.5		
System Total	160	100.0		

Q3.7_ Customers are concerned about their private information & security policy.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	2	1.3	1.3	1.3
Disagree	11	6.9	7.0	8.3
Neutral	25	15.6	15.9	24.2
Agree	76	47.5	48.4	72.6
Strongly Agree	43	26.9	27.4	100.0
Total	157	98.1	100.0	
Missing	3	1.9		
System Total	160	100.0		

Q3.8_ There is a user privacy policy mentioned on the website to strengthen trust of customers.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	4	2.5	2.5	2.5
Disagree	7	4.4	4.4	6.9
Neutral	33	20.6	20.8	27.7
Agree	69	43.1	43.4	71.1
Strongly Agree	46	28.8	28.9	100.0
Total	159	99.4	100.0	
Missing	1	0.6		
System Total	160	100.0		

Q3.9_ There is limitation in network infrastructure and internet related services.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	0.6	0.6	0.6
Disagree	11	6.9	6.9	7.5
Neutral	18	11.3	11.3	18.8
Agree	69	43.1	43.1	61.9
Strongly Agree	61	38.1	38.1	100.0
Total	160	100.0	100.0	

Q3.10_ There is limitation in ICT infrastructure.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	0.6	0.6	0.6
Disagree	9	5.6	5.8	6.5
Neutral	25	15.6	16.1	22.6
Agree	72	45.0	46.5	69.0
Strongly Agree	48	30.0	31.0	100.0
Total	155	96.9	100.0	
Missing	5	3.1		
System Total	160	100.0		

Q3.11_ Customers encounter problems related with computer literacy.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	3	1.9	1.9	1.9
Disagree	8	5.0	5.0	6.9
Neutral	27	16.9	17.0	23.9
Agree	65	40.6	40.9	64.8
Strongly Agree	56	35.0	35.2	100.0
Total	159	99.4	100.0	
Missing	1	0.6		
System Total	160	100.0		

Q3.12_ There is frequent power disruption.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	17	10.6	10.9	10.9
Neutral	24	15.0	15.4	26.3
Agree	66	41.3	42.3	68.6
Strongly Agree	49	30.6	31.4	100.0
Total	156	97.5	100.0	
Missing	4	2.5		
System Total	160	100.0		

Q3.13_ There exist relatively high cost of internet.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	6	3.8	3.8	3.8
Disagree	19	11.9	12.1	15.9
Neutral	35	21.9	22.3	38.2
Agree	59	36.9	37.6	75.8
Strongly Agree	38	23.8	24.2	100.0
Total	157	98.1	100.0	
Missing	3	1.9		
System Total	160	100.0		

Q3.14_ There is lack of law mandating the bank to adopt electronic- banking technology.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	5	3.1	3.2	3.2
Disagree	21	13.1	13.5	16.7
Neutral	41	25.6	26.3	42.9
Agree	60	37.5	38.5	81.4
Strongly Agree	29	18.1	18.6	100.0
Total	156	97.5	100.0	
Missing	4	2.5		
System Total	160	100.0		

Q3.15_ There is lack of legal framework for electronic-banking.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	5	3.1	3.2	3.2
Disagree	21	13.1	13.6	16.9
Neutral	37	23.1	24.0	40.9
Agree	53	33.1	34.4	75.3
Strongly Agree	38	23.8	24.7	100.0
Total	154	96.3	100.0	
Missing	6	3.8		
System Total	160	100.0		

Q3.16_ There is lackof sufficient gov't support that affect customers' willingness.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	2	1.3	1.3	1.3
Disagree	22	13.8	14.4	15.7
Neutral	42	26.3	27.5	43.1
Agree	56	35.0	36.6	79.7
Strongly Agree	31	19.4	20.3	100.0
Total	153	95.6	100.0	
Missing	7	4.4		
System Total	160	100.0		

Q3.17_ There is lack of adequate coordination, interaction and cooperation between Commercial Bank of Ethiopia and other decision making centers in electronic-banking technology.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	2	1.3	1.3	1.3
Disagree	25	15.6	15.6	16.9
Neutral	34	21.3	21.3	38.1
Agree	67	41.9	41.9	80.0
Strongly Agree	32	20.0	20.0	100.0
Total	160	100.0	100.0	

Q3.18_ There is lack of trust by users in electronic-banking technology provided by Commercial Bank of Ethiopia.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	4	2.5	2.5	2.5
Disagree	23	14.4	14.5	17.0
Neutral	32	20.0	20.1	37.1
Agree	55	34.4	34.6	71.7
Strongly Agree	45	28.1	28.3	100.0
Total	159	99.4	100.0	
Missing	1	0.6		
System Total	160	100.0		

Q3.19_ There is tight foreign currency regulation.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	3	1.9	1.9	1.9
Disagree	10	6.3	6.5	8.4
Neutral	40	25.0	26.0	34.4
Agree	59	36.9	38.3	72.7
Strongly Agree	42	26.3	27.3	100.0
Total	154	96.3	100.0	
Missing	6	3.8		
System Total	160	100.0		

Q4.1_ E-banking creates opportunity for Late adopters to improve their habits.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	7	4.4	4.4	4.4
Neutral	17	10.6	10.6	15.0
Agree	77	48.1	48.1	63.1
Strongly Agree	59	36.9	36.9	100.0
Total	160	100.0	100.0	

Q4.2_ E-banking creates rapid growth of mobile user in the country.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	7	4.4	4.5	4.5
Neutral	18	11.3	11.6	16.1
Agree	64	40.0	41.3	57.4
Strongly Agree	66	41.3	42.6	100.0
Total	155	96.9	100.0	
Missing	5	3.1		
System Total	160	100.0		

Q4.3_ E-banking creates existence of high demand for various employees to pay via the system.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	5	3.1	3.1	3.1
Neutral	15	9.4	9.4	12.6
Agree	76	47.5	47.8	60.4
Strongly Agree	63	39.4	39.6	100.0
Total	159	99.4	100.0	
Missing	1	0.6		
System Total	160	100.0		

Q4.4_ E-banking initiates existence of competition in the banking industry.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	0.6	0.6	0.6
Disagree	2	1.3	1.3	1.9
Neutral	12	7.5	7.7	9.6
Agree	65	40.6	41.7	51.3
Strongly Agree	76	47.5	48.7	100.0
Total	156	97.5	100.0	
Missing	4	2.5		
System Total	160	100.0		

Q4.5_ E-banking creates improvement in the banking habit of the society.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	5	3.1	3.2	3.2
Neutral	10	6.3	6.5	9.7
Agree	76	47.5	49.0	58.7
Strongly Agree	64	40.0	41.3	100.0
Total	155	96.9	100.0	
Missing	5	3.1		
System Total	160	100.0		

Q4.6_ E-banking creates commitment of the government to strengthen the banking industry.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	9	5.6	5.7	5.7
Neutral	22	13.8	13.8	19.5
Agree	70	43.8	44.0	63.5
Strongly Agree	58	36.3	36.5	100.0
Total	159	99.4	100.0	
Missing	1	0.6		
System Total	160	100.0		

Q4.7_ E-banking creates commitment of the government to facilitate the expansion of ICT infrastructure.

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	0.6	0.6	0.6
Disagree	6	3.8	3.8	4.4
Neutral	17	10.6	10.6	15.0
Agree	70	43.8	43.8	58.8
Strongly Agree	66	41.3	41.3	100.0
Total	160	100.0	100.0	