



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

**CHALLENGES AND OPPORTUNITIES OF  
ELECTRONIC BANKING IN NIB INTERNATIONAL  
BANK**

**BY**

**SABA DEBELA**

**ID.NO. MBAAF/0149/2010B**

**JUNE, 2020**

**ADDIS ABABA, ETHIOPIA**

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**A THESIS SUBMITTED TO ST.MARY'S UNIVERSITY,SCHOOL OF  
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**APPROVED BY BOARD OF EXAMINERS**

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**Dean, Graduate Studies**

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**Signature**

**Zenegnaw Abiy (PhD)  
Advisor**

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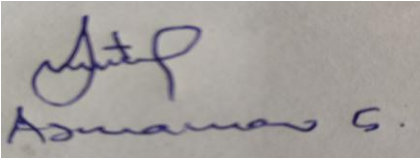
**Signature**

**External Examiner**

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**Signature**

**Asmamaw Getie (Ass. Prof.)  
Internal Examiner**



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**Signature**

## **DECLARATION**

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Dr. Zenegnaw Abiy Hailu. 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.

**SABA DEBELA**

Name

St. Mary's University, Addis Ababa

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Signature

June, 2020

## ENDORSEMENT

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

Zenegnaw Abiy Hailu (PhD)

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Advisor

Signature

St. Mary's University, Addis Ababa

June, 2020

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## List of abbreviation

ACCH	Automatic cheque clearing house
ATM	Automated teller machine
ATS	automated transfer system
AVR	Automated voice response
CBE	Commercial bank of Ethiopia
CSFs	Critical success factors
E-banking	Electronic banking
E-commerce	Electronic commerce
ECX	Ethiopian commodity exchange
EFT	Electronic fund transfer
E-payment	Electronic payment
ICT	Information communication technology
IT	Information technology
NBE	National bank of Ethiopia
NPS	National payments system
PC	Personal computer
PDA	Personal digital assistance
POS	Point of sale
PSS	Premium Switch Solution
RTGS	Real-time gross settlement
PIN	Personal identification number
SME	Small and Medium enterprise
SMS	Short message service
SPSS	Statistical package for social science
TA	Technology associates
TAM	Technology acceptance model
TOE	Technology organization environment

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## Abstract

*Electronic banking is a term used for new age banking system, represents an automated delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channels. This study was intended to show opportunities and challenges of e-banking service focusing on Nib International Bank. The concurrent mixed research design was used. This study used primary and secondary source of data. The collected data was analyzed using quantitative and qualitative techniques. A total of 88 respondents were involved at head office of NIB International bank in both staff and customers. The questionnaire prepared for staff and customer were different. In order to analyses the collected data were entered into Statistical Package for the Social Sciences (SPSS) software. The study indicated that the basic benefits of E-banking for the staff and customers of Nib international Bank main branch available. The benefits of E-banking for staffs are Operational Benefits such as reduces paper work, improving transaction speeds, increase reliability and reducing errors, facilitates development of new products and new business in the banking industry, convenient, enhance accessibility of the bank's services, overcome geographical limitations, improves customer service and has low transaction cost. Although benefits of E-banking is identified by respondents, there are also some challenges. The majority of the respondent agreed that the challenge of E-banking are technological innovations used, lack of managerial skills in implementation and development of e-banking technology, high cost of implementation of e-banking and resistance to changes in technology by higher managers, lack of educated and efficient staff in e-banking context and Money laundering and other financial crimes easily facilitated through e-banking. Furthermore, lack of social awareness, Inadequate ICT infrastructure, risk of security, customer reluctance, no help in any query online, service deliver is not exactly as promise were also the identified challenges in using e-banking. It is concluded that Basic operational benefits of E-banking for the customers are convenience, accessibility, ease of use, low cost of using banking activity, providing real time information and getting quality service. Based on the finding it is recommended to exploit the benefit of E-banking system, the Nib international bank should have strategies to create awareness for customers to familiarize the service and enjoy the benefit.*

# Chapter One

## 1. Introduction

### 1.1 Background of the study

The electronic technology is playing a major role for the world of business especially in banking activities these days. Electronic Banking has been widely used in developed countries and is rapidly expanding in developing countries. Hence, banks have begun to offer electronic banking services to improve the effectiveness of distribution channels through reducing the transaction cost and increasing the speed of services. Recently, electronic banking has become the way for the development of banking system, and the role of electronic banking is increasing in many countries. It offers opportunities to create services processes that demand few internal resources, and therefore, lower cost. As well as it provides wider availability and possibility to reach more customers (Mian and Rizwan, 2013).

Information and communication technologies are playing a very important role in the advancement of banking by introducing electronic banking which include Automated Teller Machine (ATM), mobile and internet (online) banking, electronic funds transfer, direct bill payments and credit card (Gikandi and Bloor, 2010) to ease the banking activities. Among these e-banking facilities, the Automated Teller Machine (ATM) is the first well known and widely adopted system that was introduced to facilitate the access of the user to his/her banking activities (Nyangosi et al. 2009; Claessens et al., 2002) .

E-banking helps financial service providers to achieve cost reduction, revenue enhancement, product diversification, increased competitiveness and better brand image. The benefits of e-banking are not confined to banks alone. As Lee (2008) noted, e-banking in its various forms, provides a convenient, low cost alternative to the traditional bank visit. Therefore, transition to e-banking is becoming necessary for banks to benefit from competitive advantage, to improve efficiency and operational effectiveness within the company and to develop a stronger and more durable business relationship with customers.

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

The first bank to use ATM was Barclays Bank in Enfield Town in north London, United Kingdom, on 27 June 1967. Telephone banking arrived next, which was a revolutionary concept since it makes banking possible from anywhere as long as telephones were available. Since then, e-banking has constantly innovated through technology improved products and services (Ogare, 2013). According to Karimzadeh et al (2014), the new technology has been able to alter the way of doing basic tasks. Most of the jobs, which were assigned to the bank cashier in a traditional way, now are done much cheaper by ATMs. Advancement of technology has led people to do their banking at home. This study is intended to show opportunities and challenges of e-banking service focusing on Nib International Bank.

## **1.2 Background of the Organization**

Nib International Bank (NIB) was established on 26 May 1999 under license no. LBB/007/99 in accordance with the Commercial Code of Ethiopia and the Proclamation for Licensing and Supervision of Banking Business Proclamation no. 84/1994 with the paid up Capital of birr 27.6 million and authorized capital of Birr 150 million by 717 Shareholders. The Bank commenced its operation in 28 October 1999 by 27 employees. It joined the banking industry as the sixth private bank licensed in the country.

Other than rendering fulfilled Domestic and International Banking services the Bank implemented Mobile and Internet Banking through which it issues NIB cards and has placed its ATM's at various locations throughout the Country to provide its diversified products in convenient ways to our esteemed customers. Moreover, to enhance the application of modern banking technologies and provide competitive service via a wide range of card banking services, the Bank has established a strategic partnership with MasterCard, VISA and Union Pay branded cards which is one of the breakthroughs to provide international payment

service. A full-scale preparation to upgrade the Bank's T24 application to the latest and robust release is completed.

With a view to introduce new types of products, other than the previous innovative products and services Gojo-Guzo Foreign Exchange (FX) linked deposit and loan products, credit products to employment agencies and employees working abroad to enhance FX generation and Murabaha interest free financing products were developed.

The development of the 3<sup>rd</sup> strategic plan is now at implementation phase and putting a new structure formulating policy manuals and cascading the various targets of the strategic plan to the implementing units. The Billion Birr construction projects of NIB's Headquarter and Hawassa buildings are enhanced as per the schedule and the construction of Arat Killo and Hosahna buildings would be fully completed in 2018/19 budget year.

Among others, the Bank has registered a steady growth and achievement in all aspects of its operations since its establishment. At the end of March 2018/19, its total deposits and loans and advances stood at about Birr 25.1 billion and Birr 17.5 billion respectively. Total assets also grew to about Birr 31.1 billion and paid up capital to Birr 2.5 billion. The level of net profit before tax reached Birr 673.1 million in March 2018/19. The Bank's shareholders are close to 4,585 and the total number of customers exceeds 812,627. According to the Nib International Bank report, more than 4,797 employees reached as at March 2019.

### **1.3 Statement of the problem**

Now days, in Ethiopia the banking industry increases from time to time, as a consequence users have many choices to prefer and as a result of this they are focusing on the quality of service. In Ethiopia, many customers, voice concern about inefficiency and lack of quality in banking sector. To be competitive in the prosperous market, cross selling practice is the marketing tool. E-banking which refers to the use of modern technology that allows customers to access banking services electronically whether it is to withdraw cash, transfer funds, and to pay bills, or to obtain commercial information and advices are not well known in Ethiopia (Ayana, 2012).



E-banking began to occur quite extensively as a channel of distribution for financial services due to rapid advances in IT and intensive competitive banking markets. In addition, financial institutions have been investing millions of dollars in the new technology system with the expectation that it will contribute to the overall profitability and market share. However, the return will be less or operating in loss, if the consumers do not accept or fully utilize its capacity. So, the understanding of consumers acceptance and use of new technology and its impact on the performances are prerequisites in obtaining returns' from this investments (Kumegan, 2004). There is also a growing concern that e-banking is not yielding the anticipated results, creating a gap between the actual returns and the proposed objectives and there by losing a large amount of investment (Nyangena and Muturi, 2015).

Girume Kebede, 2016, described the problems and benefit from e-banking service quality and the technology deployment in CBE; the impact of e-banking services on the performance of top performer commercial banks in Ethiopia was conducted (Betelhem Berhan, 2018); and the challenges and benefits associated in the adoption of e-Banking technology in commercial Bank of Ethiopia was also studied (Endrias Bekele, 2017).

In this study the research aimed to explore the challenges and opportunities of e-banking in Nib International Banks. The research topic was selected because of hoping that it will give a valuable insight of the problem and will provide suggestive ideas through reviewing information from problem area. On the other hand, this research focuses on describing the current situation of the problem and examining the main challenges and opportunities of e-banking in Ethiopia. Moreover, this research aims to explain the phenomenon and assess the current situation of e-banking.

The study was conducted in service providers and users of electronic banking service in Nib International Bank. There are three government and sixteen private owned commercial banks operating in Ethiopia. Currently, those banks such as Berhan Bank, Awash International Bank, Nib International Bank, United Banks and others have banks jointly formed a company called Premiere Switch Solutions (PSS) to provide electronic banking services in Ethiopia. Of these nineteen banks, seven of them are providing electronic banking services.

Those banks which provide electronic banking services in Ethiopia are Commercial Bank of Ethiopia (CBE), Dashen Bank, Wegagen Bank, Zemen Bank, Awash International Bank, Nib International Bank and United Bank. Among those seven banks Dashen, Wegagen and Zemen are grouped under the category of pioneer and well established banks; Awash International Bank, Nib International Bank and United Bank are categorized under those banks that are new comers to the electronic banking industry. Again among these two broad categories, Nib International Bank is selected as a sample for this research. This bank is purposely selected for the reason that the researcher has got willing and cooperative individuals who can assist in providing the relevant information on electronic banking services. Moreover, it is selected for the reason assumed to have easy access to get the required information.

In Ethiopian banking industry, there are a number of challenges commercial banks operating in the country are facing 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 (Megersa, 2010). There is also lack of specialists with 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.

Therefore, more studies and explorations including customer's perceptions are important to better understand what to do to enhance e- banking services in Ethiopia. This research makes efforts to combine views of both bank officers and users of e- banking services. As a result this research is intended to contribute towards filling up the gap in terms of understanding the opportunities and challenges in the e-banking service focusing on Nib International Bank in light of the research problems discussed above in order to provide appropriate and more precise recommendations for successful e-banking services.

## **1.4 Objective of the study**

### **1.4.1 General objective of the study**

The general objective of the study was to identify the opportunities and challenges of electronic banking system in Nib International Bank.

### **1.4.2. Specific objectives**

Specific objectives that have to be addressed in the study are:

- To find operational benefits of electronic banking system in Nib International Bank
- To identify challenges of electronic banking system in Nib International Bank
- To determine organizational factors that influence electronic banking system in Nib International Bank
- To explore environmental factors that influence electronic banking system in Nib International Bank
- To investigate technological factors that influence electronic banking system in Nib International Bank

## **1.5. Research Questions**

Based on the above stated objectives, the following research questions were answered:

RQ1: What are the operational benefits of electronic banking system in the development of Nib International Bank?

RQ2: What are the challenges in the application of electronic banking system in Nib International Bank?

RQ3: What are organizational factors that influence electronic banking system in Nib International Bank?

RQ4: What are the environmental factors that influence electronic banking system in Nib International Bank?

RQ5: What are the technological factors that influence electronic banking system in Nib International Bank?

## **1.6. Scope of the study**

There are different private banks in Ethiopia. The study focuses on Nib International Bank about challenge and opportunity of e-banking. The researcher wished to assess all branch offices of all Banks to be included in the study in Addis Ababa. However, due to shortage of time and resources it is limited to identify only Nib international bank to study the development of e-banking technology in the Ethiopian banking industry with respect to their Challenges and Opportunity from the banks perspective. Thus, the researcher proposed to distribute the questionnaires both for the staff of e-banking department and e-banking users at eight purposely selected Addis Ababa Area Nib International Banks per their Customers of users in e-banking service delivery.

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

The purpose of the study is to assess the challenges and opportunities for the adoption and development of e-banking technology in Nib International Bank in Addis Ababa. In general the study will have the following significance. Since e-banking technology is in an infant stage in Ethiopia including Nib International Bank, identification of opportunities and challenges for the adoption of e-banking can impact positively on the performance of banks that wish to adopt and/or have adopted e-commerce applications.

Provide an opportunity for decision-makers and managers of banks to consider and evaluate the opportunities and problems observed in the existing practices in order to take appropriate corrective measures in the area or to accelerate the positive factors for the promotion of e-banking practices. The finding will provide a framework for the banks for the design of their future directions and to adjust their goals and objectives as per real opportunities and challenges.

The study will also provide input for further research on the area, especially with respect to the challenges and opportunities related with the lack of social awareness/lack of familiarity with different technology and lack of sufficient skills to use and implement e-banking system of Nib International Bank.

### **1.8. Organization of the study**

The research report organized into five chapters: Chapter one focuses on the background of the study, problem statement, objectives and significant of the study. In chapter two, a range of literatures review captured to gather relevant information concerning e-banking. In chapter three, detail of methodology followed to achieve results is outlined. It includes the study design, sampling, sampling technique and data analysis. Chapter four contained results and discussion from the study supported with findings from other research works. Chapter five focused on main findings, conclusions and recommendations of the study.

## Chapter Two

### 2. Literature Review

#### 2.1. Theoretical Issues

The purpose of this chapter is to review the literature in the area of e-banking adoption and development and mainly focused on the challenges, benefits, drivers and opportunities of adopting e-banking technology. This review of literature established a framework, which can guide the study.

#### 2.2. Definition of E-banking

The definition of electronic banking (e-banking) varies amongst researchers because e-banking refers to several types of services through which a bank's 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 defined e-banking in different ways based on their understanding of the application of electronic banking.

E-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 a computer to retrieve and process banking data (statements, transaction details, etc.) and to initiate transactions (payments, transfers, requests for services, etc.) directly with a bank or other financial service provider remotely via a telecommunication network (Yang, 1997, pp.2) same is shared by Malak (2007). Sathye (1999) also asserted that electronic banking can be defined as a variety of the following platforms: Internet banking (online banking), telephone banking, television-based banking, mobile phone banking and PC (personal computer) banking (offline banking) whereby customers access these services using an intelligent electronic device like PC, Personal Digital Assistant (PDA), Automated Teller Machine (ATM), Point of Sale (POS), kiosk, or touch tone telephone (Alagheband 2006, p.11).

Daniel (1999) explained e-banking is online banking (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. This implies that e-banking 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. According to Singh & Malhotra (2004), e-banking can be defined as the deployment of banking services and products over electronic and communication networks directly to customers. 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.

### **2.3. Evolution of E-banking**

Since the late 1990s E-banking has developed from virtual insignificance to tens of millions of users worldwide (OECD, 2004). However, E-banking is the product of different generations of electronic transactions. The current web-based internet is the latest of several generations of systems: Automated Teller Machine (ATMs), Phone Banking, PC or House Banking. Automated Teller Machines (ATMs) were the first well-known machines to provide Electronic access to customers where as in phone banking, users call their bank's computer system on their ordinary phone and use the phone keypad to perform banking transactions.

PC banking superseded phone banking and allowed users to interact with their bank by means of a computer with a dial-up modem connection to the phone network. Phone and PC banking entailed maintenance costs associated with keeping up to date with diverse modems and with avoiding prohibitively complex installation procedures. After those generations Deutsche Bank launched the very first Internet banking project in Latin America in 1996 and Citibank has developed a special "e-toolkit" across all its branches worldwide (UNCTAD, 2002).

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

## 2.4. The Importance of e-banking

With the advancement in telecommunication, electronic banking systems are rapidly replacing the traditional modes of payment that involved personal contact between buyers and sellers. Electronic banking systems entail online financial transactions that utilize some form of a digital financial device, such as e-tokens, e-cash and checks (Stefan et al., 2000).

E-banking systems present a number of benefits to both individuals and businesses. Electronic banking systems allow financial institutions, businesses and the government to offer a variety of payment options to their customers. These systems include automated teller machines, debit cards, credit cards, mobile banking and payment of bills through the phone. Traditional business payment systems depend mainly on a limited number of the business outlets (IJRBM, Vol. 1, Issue 1, and June 2013.)

E-banking systems result in reduced costs for both businesses and individuals. Businesses save on operational and processing expenses mainly due to reduction in technological costs, for example, the use of the Internet and the acquisition of computers and other machines. Expenditures in paper and postage are cut down along with time spent in executing personal transactions. Customers also save on time spent in dealing with personal transactions as in traditional payment systems. It also offer the main benefit from the bank customers' point of view is significant saving of time by the automation of banking services processing and introduction of an easy maintenance tools for managing customer's money.

The main advantages of e-banking for corporate customers are as follows (IJRBM Vol. 1, Issue 1, and June 2013): Reduced costs in accessing and using the banking services; increased comfort and time saving - transactions can be made 24 hours a day, without requiring the physical interaction with the bank; quick and continuous access to information- Corporations will have easier access to information as they can check on multiple accounts at the click of a button; better cash management - e-banking facilities speed up cash cycle and increases efficiency of business processes; convenience - all the banking transactions can be performed from the comfort of the home or office or from the place a customer wants to; speed - the response of the medium is very fast, therefore customers can actually wait till the last minute before concluding a fund transfer.



## **2.5. E-Banking System in Ethiopian Banking Industry**

The appearance of e-banking in Ethiopia goes back to the late 2001 when the largest state owned, commercial bank of Ethiopia (CBE), introduced ATM to deliver service to the local users. In addition to 8 ATM located in Addis Ababa, CBE has had Visa membership since November 14, 2005. But, due to lack of appropriate infrastructure it failed to reap the fruit of its membership. Despite being the pioneer in introducing ATM based payment system and acquired visa membership, CBE Lagged behind Dashen bank, which worked aggressively to maintain its lead in e-payment system. As CBE continues to move at a snail's pace in its turnkey solution for Card Based Payment system, Dashen Bank remains so far the sole player in the field of e-Banking since 2006 (Gardachew 2010).

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

Available services on Dashen Bank ATMs are: Cash withdrawal, Balance Inquiry, Mini statement, Fund transfer between accounts attached to a single card and Personal Identification Number (PIN) change. Currently, the bank gives debit card service only for Visa cards. Dashen bank clients can withdraw up to 5,000 birr in cash and can buy goods and services up to 8,000 to 13000 birr per day. Expanding its leadership, Dashen Bank has begun accepting MasterCard in addition to Visa cards.

Dashen won the membership license from MasterCard in 2008. Harnessing its leadership with advanced banking technology, Dashen Bank signed an agreement with iVery, a South African E-payment technology company, for the introduction of mobile commerce in April 21, 2009. According to the agreement, iVery Payment Technologies has licensed its Gateway and MiCard E-payment processing solution to Dashen Bank. Dashen's Modbirr users can transfer 500 birr to other Modbirr users in 24 hours a day. This would make Dashen Bank the first

private bank in Ethiopia to acquire E-commerce and mobile merchant transactions (Amanyehun, 2011).

Dashen's new technology is one step ahead in that it allows transfer of funds from one's account to others, the first ever E-banking gateway was signed between Ethiopian Commodity Exchange (ECX) and Dashen Bank and CBE. The E-banking system being developed with both banks is designed to give a secure electronic data sharing gateway between clients, banks and ECX, by facilitating a smooth transaction (Abiy 2008)

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

Zemen Bank, the only Ethiopian bank anchored in the idea of single branch banking, by launching full-blown internet banking, a service which is new to Ethiopian banking industry in the year 2010. The bank tested the venture through its first phase of the online service, and now it is already started the full-fledged version, which enable customers to make online money transfer freely.

Previously, the online banking service, delivered by the bank, only gave access to bank statements and exchange rate information. The new and never-been-tried service proposed by the bank is to include free account money transfer, corporate payroll uploading system where employers could upload payroll to the system and make payments to individual worker's accounts online and online utility bill settlement system, when utility companies are ready (Asrat 2010).

The agreement signed by three private commercial banks to launch ATM and POS terminal network, in February 2009 is welcoming strategy to improve electronic card payment system in Ethiopia. Three private commercial banks - Awash International Bank S.C., Nib International Bank S.C. and United Bank S.C. have agreed in principle to establish an ATM network called Fettan ATM network. If everything goes as planned, Fettan ATM will install over 140 ATM machines and over 340 POSs across Ethiopia. There will be one ATM at every branch of the consortium banks, all domestic airports serviced by Commercial service, shopping complexes and merchants. The agreement is the first

significant cooperation between competing banks in Ethiopia, which others should be encouraged to follow as there is no single bank in Ethiopia that can afford to provide Extensive geographical coverage and access (Binyam 2009).

## **2.6. Types of E-banking**

Among the many e-banking delivery channels to provide banking service to customers, ATM, POS, Mobile & agent banking and internet banking are the most widely used and discussed below.

ATM is a machine where cash withdrawal can be made over the machine without going in to the banking hall. It also sells recharge cards and transfer funds; it can be accessed 24 hours/7 days with account balance enquiry (Fenuga, 2010). ATM is same as teller point but it runs automatically through identity like card and password. It does not need any slip or Cheque but it is very much based on account holder's ATM card and its Password. Generally, ATM machines provide the same services, such as money withdrawal, fund transfer, balance enquiry, mini statement, and money transfer from one account to the other.

E-banking can be defined as a variety of platforms such as internet banking or (online banking), TV-based banking, mobile phone banking, and PC (personal computer) banking (or offline banking) whereby customers access these services using an intelligent electronic device, like PC, personal digital assistant (PDA), automated teller machine (ATM), point of sale (POS), kiosk, or touch tone telephone (Alagheband 2006, p.11). According to Alagheband, there are different types of e-banking and some of them are discussed as follows:

### **AUTOMATED TELLER MACHINES (ATM)**

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

### **INTERNET BANKING**

Internet banking allows customers of a financial institution to conduct financial transactions on a secure website operated by the institution, which can be a retail or virtual bank, credit union or society. It may include any of transactions related to online usage. Banks

increasingly operate websites through which customers are able not only to inquire about account balances, interest and exchange rates but also to conduct a range of transactions. Unfortunately, data on Internet banking are scarce, and differences in definitions make cross-country comparisons difficult (Alabar, 2012).

## **POS**

POS also sometimes referred to as point of purchase (POP) or checkout is the location where a transaction occurs. A "checkout" refers to a POS terminal or more generally to the hardware and software used for checkouts, the equivalent of an electronic cash register. A POS terminal manages the selling process by a salesperson accessible interface. The same system allows the creation and printing of the receipt. POS systems record sales for business and tax purposes (Shittu, 2010).

## **MOBILE BANKING**

Mobile banking also known as m-Banking is a term used for performing balance checks, account transactions, payments, credit applications and other banking transactions through a mobile device such as a mobile phone or PDA. The earliest mobile banking services were offered over Short Message Service (SMS), a service known as SMS banking. Mobile banking is used in many parts of the world with little or no infrastructure, especially remote and rural areas. This aspect of mobile commerce is also popular in countries where most of their population is unbanked. In most of these places, banks can only be found in big cities, and customers have to travel hundreds of miles to the nearest bank. The scope of offered services may include facilities to conduct bank and stock market transactions, to administer accounts and to access customized information (Tiwari et al., 2007).

## **AGENT BANKING**

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

pharmacies, supermarkets, convenience stores, lottery outlets, post offices, and many more (Wiki for banking agent, 2015).

Banking agents are usually equipped with a combination of POS card reader, mobile phone, barcode scanner to scan bills for bill payment transactions, PIN pads, and sometimes personal computers (PCs) that connect with the bank's server using a personal dial-up or other data connection. Clients that transact at the agent use a Magnetic Stripe (Mag-Stripe) bank card or their mobile phone to access their bank account or e-wallet respectively. Identification of customers is normally done through a PIN. With regard to the transaction verification, authorization, and settlement platform, banking agents are similar to any other remote bank channel (Wiki for banking agent, 2015)

Banking agents are the backbone of mobile banking, i.e., performing transactions over a mobile device, most often a mobile phone. To enable clients to convert cash into electronic money and vice versa which can be sent over their mobile phone, clients will have to visit a branch, ATM, or banking agent. Especially in remote and rural locations, where cash is still the most important way to pay and transact, a mobile banking service is dependent on banking agents to enable clients to effectively use the service (Wiki for banking agent, 2015).

### **Credit Cards**

A credit card is a small plastic card issued to users as a system of payment. It allows its holder to buy goods and services based on the holder's promise to pay for these goods and services. The issuer of the card creates a revolving account and grants a line of credit to the consumer (or the user) from which the user can borrow money for payment to a merchant or as a cash advance to the user (Mavri & Ioannou, 2006). A credit card is different from a debit card in that it does not withdraw money from the users account after every transaction. The issuer lends money to the consumer to be paid to the merchant. Holders of a valid credit card have the authorization to purchase goods and services up to a predetermined amount, called a credit limit. The vendor receives essential credit card information from the cardholder, the bank issuing the card actually reimburses the vendor, and eventually the cardholder repays the bank through regular monthly payments. If the entire balance is not paid in full, the credit card issuer can legally charge interest fees on the unpaid portion.

## **Debit Cards**

A debit card (also known as a bank card or cheque card) is a plastic card that provides an alternative payment method to cash when making purchases. 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 & Ioannou, 2006).

Nib International Bank is committed to operate under the changing information technologies. In this regard, various software solutions were internally developed. Among which; software that ensures a secure intra office communication platform is implemented. Inventory Management System and Signature Capture and Retrieval System are under implementation. Furthermore, a Queue Management enhancement for the foreign exchange application and Approval and Report System are also implemented. With the view to automating human resource management, employees' full data entry is underway.

The Bank's mobile and internet banking services are improving from time to time and has continued serving customers as a result significant number of customers subscribed to the Bank's Mobile Banking and Internet Banking Services. To enhance the application of modern banking technologies and provide competitive service via a wide range of card banking services, the Bank is also providing payment service with Master Card, VISA and Union Pay international branded cards.

ATM card banking and POS, which are the Bank's priority service delivery channels, are progressing well. Apart from the Premier Switch Solution (PSS) and EthSwitch member banks ATM machines, the Bank is delivering card banking service with its own ATMs and Point of Sale (POS) deployed at different locations. In this regard, the Bank has distributed a total of 42,254 NIB Cards to its customers raising the number of ATM card holders to 115,889. Through NIB Internet Banking enjoy online, easy, real-time access to your account information in the comfort of your home, office or from any remote location.

Automated teller machine (ATM) is a computerized telecommunications device that provides customers with access to financial transactions in a public space without the need for a human Clerk or Bank Teller. Nib International Bank deployed ATMs at convenient places for all its

own debit card holders as well as Visa international, Master Card and Union Pay card holders. With the ATM, anybody can access their own accounts 24/7.

The following are list of services available on Nib International Bank ATMs:

- Cash withdrawals– withdraw sum of money by inserting the desired denomination.
- Fund Transfer– Transfer funds from account to account.
- Balance enquiry– To know the remaining balance in the account.
- Mini-Statement – Print financial transactions made during the last ten days.
- Full Statement request –Print monthly financial transaction.
- Personal Identification Number (PIN) change– changes the existing PIN number.

Apart from implementing state-of-the- art technology on its own, it has begun providing Card Banking Services through PSS (Premiere Switch Solutions), a company established by the consultation of NIB, AIB, UB, CBO and BIB. The following Card Banking Services are readily available at selected Branches, Hotels, and Investment areas and at University or Collage areas.

- Withdrawal - To withdraw sum of money by inserting the Card.
- Balance Inquiry - To know the remaining balance in the account.
- Short statement - To view a short statement.
- Change PIN- To change your PIN any time as and when necessary.
- Money Transfer - To transfer money from account to account.
- POS Terminals -To effect payments for goods and services through POS.

SWIFT (Society for Worldwide Inter-Bank Financial Telecommunication) provides secure global financial communication services to financial institutions around the globe to support their business activities in payments, forex and money markets, securities and trade services. SWIFT is a cooperative society owned exclusively by its member banks. SWIFT enables Nib Bank's transactions with correspondent banks to be timely, accurate, efficient, & reliable and almost risk free.

Features for the NIB service include:

- Bank Balance Enquiry

- Viewing Last 10 transactions on an account
- Transfer of Funds to other NIB Accounts
- Transfer of Funds to Accounts with other Banks
- Airtime Purchase (i.e. MTN, AirtelTigo, Vodafone, Glo)
- Bill Payments (i.e. ECG, Water, DSTV, GoTv, etc.)
- Account to Wallet Transfer
- Wallet to Account Transfer
- Purchase Internet Bundles (i.e. Busy 4G, Surflite, etc.)
- Other Bank/Account Enquiries

Benefits to Customers include:

- Access to real-time account balance information
- Deposit mobile money into your NIB account easily
- Transfer money to any mobile money wallet (i.e. MTN, AirtelTigo, Vodafone)
- Make payments to any bank account instantly
- Purchase airtime anyday, anytime without scratch cards
- Purchase data bundles quickly and easily (i.e. Busy 4G, Surflite, etc.)
- The service is faster, easier, and very secure
- Funds are credited or debited directly into your account
- No airtime or data required to access the service
- Service is available to MTN, AirtelTigo, Vodafone subscribers
- No need to enter the banking hall or fill any form to perform transactions
- You only need a GSM-enabled mobile phone and a registered SIM

## **2.7. Need for E-banking**

One has to approach the branch in person, to withdraw cash or deposit a cheque or request a statement of accounts. In true e-banking, any inquiry or transaction is processed online without any reference to the branch (anywhere banking) at any time. Providing e-banking is increasingly becoming a "need to have" than a "nice to have" service. The net banking, thus, now is more of a norm rather than an exception in many developed countries due to the fact that it is the cheapest way of providing banking services. Banks have traditionally been in the forefront of harnessing technology to improve their products, services



and efficiency. They have, over a long time, been using electronic and telecommunication networks for delivering a wide range of value added products and services. The delivery channels include direct dial-up connections, private networks; public networks etc. and the devices include telephone, Personal Computers including the Automated Teller Machines, etc. With the popularity of PCs, easy access to Internet and World Wide Web (WWW), Internet is increasingly used by banks as a channel for receiving instructions and delivering their products and services to their customers. This form of banking is generally referred to as Internet Banking, although the range of products and services offered by different banks vary widely both in their content and sophistication. (Singer, Daniel, Douglas Ross and Albert Avery, 2001)

## **2.8. Factors affecting electronic banking**

### **2.8.1. Technological Factors**

Different researchers described technological factors differently as explained that adoption depends on the pool of technologies both inside and outside the firm as well as the application's perceived relative advantage (gains), complexity (learning curve), compatibility (both technical and organizational), observability (visibility/imagination), trialability (pilot test/experimentation) (Hart O. et al, 2012). Salwani (2009) also explained technology competence covering the existing technology infrastructure and skills that enables to utilize the technology. Tornatzky and Fliescher (1990) considered characteristics of technologies and availability while Kvin Z. et al. (2004) described technological context as both external and internal technologies relevant to a firm, which includes existing technologies inside the firm as well as in the market. Perceived benefits and perceived risks are considered suitable from the technological factors as presented by Ayana (2012) for this study to avoid overlap between organizational and technology contexts.

Perceived Benefits covers both the direct and indirect benefits for the banking industry as well as for the consumers; where direct benefits include savings on operational cost, improved organizational functionality, improved efficiency, increased profitability and productivity gain. Indirect benefits, on the other hand, include the opportunity or intangible benefits such as improved customers' satisfaction through improved services, improved banking

experience and fulfillment of their changing needs and lifestyle (Iacovou 1995, Kuan&Chau 2001 and Lu et al. 2005).

Perceived Risks in offering e-banking services is the customers' resistance to use the services that significantly hinder the growth of e-banking (Laforet 2005 and Zhao et al. 2008). Issue related to security is also a concern when dealing with technologies related to online transactions such as agent banking (Chang 2007 & Rogers 2003). Therefore, the perception of the risks regarding the agent banking is expected to influence its adoption (Ayana, 2012).

### **2.8.2. Organizational Factors**

Organizational factor captures firm's business scope, organizational culture, top management support, complexity of organizational structure measured in terms of centralization, vertical differentiation, and formalization, the quality of human resource, and size related issues such as specialization and internal slack resources (Jeyaraj A. Et al, 2006). Iacovou (1995) and Grover (1993) also argued that organizations influenced by a number of factors, like firm size, top management support and financial and human resources in their preference to adopt technological innovation. As per Kvin Z. et al. (2004) and Tornatzky and Fleisher (1990) it is defined in terms of several descriptive measures: firm size and scope; the formalization, centralization and complexity of its managerial structure; the quality of its human resources and the amount of internally available slack resources. Accordingly, the study will consider the financial and human resources as the organizational factor in the framework for the study as discussed below.

**Financial and Human Resources:** Financial resources are important factors in facilitating innovation adoption for any organization and they are often correlated with the firm size (Iacovou 1995 and Kuan 2001). The availability of financial resources and costs related with adoption of innovations has paramount importance and deserves consideration. Human resources that enable banks to obtain the required technical and managerial skills and expertise to adopt and implement technological innovations like agency banking system are also found important to consider as factors without disregarding the customer sides.

### **2.8.3. Environmental factors**

Environmental factors mainly relates to different facilitating and inhibiting factors in areas of operations (Al-Qirim, 2006). The arena in which a firm conduct its business in adopting technological innovations; its industry, competitors, access to resources supplied by other externals and dealings with government are claimed to be covered under environmental contexts (Kvin Z. et al. 2004). Legal frameworks, the National ICT infrastructure, Competitive pressure and Government supports are amongst significant factors to be considered in the study (Ayana, 2012) as described here under.

**Legal Frameworks:** The existence and maturity of legal frameworks on the e-commerce within a country to influence the diffusion of online transactions including agent banking as indicated in various studies (Tan & Wu, 2002 and Martinson, 2001).

**National ICT Infrastructure:** National ICT infrastructure is a major factor that supports the adoption of agent banking system as the case for other initiatives. Without an adequate development and quality of a national ICT infrastructure, agent banking adoption and use cannot do well (Scupola 2003).

**Competitive pressure:** Competitive pressure can strongly influence any bank to develop and adopt agent banking initiatives and it may affect the bank's perception towards innovation (Quaddus & Hofmeyer, 2007). Intense competition stimulates the adoption of innovation (Mansfield et al. 1977).

**Government Support:** Government can either directly or indirectly affect the adoption of agent banking in terms of creating a favorable environment and momentum for banking institutions and their customers so that the services can be diffused with the community (Kuan 2001 & Iacovou 1995).

## **2.9. Empirical studies related with e-banking**

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

operating style of banks and identifies some challenges of using E-banking system, such as, lack of suitable legal and regulatory frame works for E-commerce and E- payments, political instability in neighboring countries, high rates of illiteracy and absence of financial networks that links different banks. According to Gardachew (2010), Opportunities offered by ICT through e-learning programs and Commitment of the governments on development of ICT infrastructures is considered as drivers of using Ecommerce and E-payment systems.

The study conducted by Daghfous and Toufaily (2007) on the success and critical factors in adoption of E-banking by Lebanese banks. The research was conducted on the factors that can lead to success the adoption of E-banking and the other factors that can constitute as barrier to its adoption, it focus on the organizational, structural and strategic factors which can accelerate or, on the contrary, slow the adoption of this electronic mode of distribution and communication by the banks, through analyzing the case of the Lebanese market. In order to test the validity of the theoretical framework, structured survey was used, interview questionnaire that was given to E-banking managers or to information technology managers of all the banks on the official list of institutions operating on the Lebanese market, with a total of 57 banks, 31 of them operate internationally and 26 are strictly local were used to gather data. The results of their study shows that the organizational variables (bank size, functional divisions, technical staff, technical infrastructure, perceived risks, decision makers` international experience and mastery of innovation) are variables which exert significant impact on the adoption of E-banking, among the structural characteristics, the result revealed that internal technological environment of the bank is a very important factor in determining the adoption of E-banking, also the result shows that banks which are developing in the international scale are more likely to adopt E-banking innovations. Finally the result of the study indicated that extent of penetration of E-banking in the growth phase of an emerging market has an important correlation with the improvement of commercial performance.

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

divided into tradition barrier and image barrier. According to Ram and Sheth (1989) functional barriers arise when consumers perceive changes would take place when adopting innovation and the psychological barriers are caused by consumer's beliefs. On the other hand Khanfar et al (2006) conducted study on the customer satisfaction with internet banking web site in the Arab Bank.

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

In general, Review of Empirical studies shows that understanding the practice of E -banking in Ethiopia, Africa and in the other worlds. The study mostly deals about the opportunities and challenges of E-banking practice. Some studies are also deals about the critical success factors (CSFs) in E-banking is important for banking industries because it would potentially help them improve their strategic planning process. The main obstacles and barriers that oppose E-banking practice are the concerns of security, privacy of information and technology investment cost.

Also the literature review indicates that according to the customers there are different factors that influencing the practice of E-banking such as, perceived advantages and other factors related to the services itself & how to be accepted and used by the customers, which differ from country to country, reflecting the economic and technological development in each country. This study will generally tried to assess the general practice, benefits of e-banking for the banks, customers and general economy. Problems related with the implementation of E-banking and also the practice of E-banking by customers. And also try to assess the possible intervention by the government that will promote the development of this service. (Meaza wondimu, 2013)

## **2.10. Benefit of e-banking system**

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

### **2.10.1. Benefit of e-banking for Banks**

It should be noted that E-banking can bring about various benefits for banks and their customers as well. It is obvious that cost savings, efficiency, gaining new segments of customers, improvement of the banks reputation and better customer services and satisfaction are primary benefits to banks (Jayawardhena & Foley, 2000).

Under the view of Robinson (2000), relevant costs for conducting a banking transaction via online are much lower than via a brick and mortar branch. Moreover, Sheshun off (2000) contends that one of the most important factors influencing the practice of E-banking by banks is the need to build up strong barriers to customer exiting. Under the view of the author, once customers become familiar with the utilization of full service e-banking, it is unlikely that they will change to another financial institution. Specifically, banking industry has also received numerous benefits due to growth of E-Banking infrastructure. There are highlighted below: Mols (1998).

The growth of e-banking has greatly helped the banks in controlling their overheads and operating cost. Many repetitive and tedious tasks have now been fully automated resulting in greater efficiency, better time usage and enhanced control. The rise of e-banking has made

banks more competitive. It has also led to expansion of the banking industry, opening of new avenues for banking operations.

Electronic banking has greatly helped the banking industry to reduce paper work, thus helping them to move the paper less environment. Electronic banking has also helped bank in proper documentation of their records and transactions. The reach and delivery capabilities of computer networks, such as the Internet, are far better than any branch network.

### **2.10.2. Benefit of e-banking for Customers**

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

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

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

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

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

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

**Automatic Bill Paying:** customers can automate paying their monthly bills.

**Real Time Account Information:** Because customers can access their accounts anytime, they can get up to date, real time information on the money in your accounts.

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

### **2.10.3. Benefits to General Economy**

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



illegitimate practices associated with banking industry like money laundering, frauds and embezzlements (Pham, 2010).

Benefits from the economical' point of view e-banking served not only to the bank itself, but also to the society as a whole (Pham 2010). E-banking made finance economically possible: Lower operational costs of banks, automated process, Accelerated credit decisions and Lowered minimum loan size to be profitable.

Potentially lower margins: Lower cost of entry, expanded financing reach and Increased transparency. Expand reached through self-service: lower transaction cost, make some corporate services economically feasible for society and make anytime access to accounts and loan information possible.

## **2.11. Challenges of Electronic Banking**

Despite its numerous benefits, there are challenges in the implementation of e-banking applications. Some of the identified challenges as revealed by previous research works include security, infrastructure, regulatory and legal issues and Socio-Cultural challenges.

### **2.11.1. Security**

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

According to Worku (2010), e-banking systems must also take into account the need of multilateral security keys, Security needs of all participating parties in the e-banking system. An e-payment system that is not secured may not get trust from its users. Trust is one of the crucial factors to ensure the acceptance of e-banking system by users. Martina (2005) also indicated that e-banking applications represent a security challenge as they highly depend on critical ICT systems that create vulnerabilities in financial institutions, businesses and potentially harm customers. It is imperative for banks to understand and address security concerns in order to leverage the potential of ICTs in delivering e-banking

applications. Software failures can also be considered as security challenges as it destroy entire portions of a network and bring huge losses. According to Tadesse and Kidan (2005), some of the major security challenges include the following.

#### A. Disclosure of private information

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

#### B. Counterfeiting

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

#### C. Illegal alteration of payment data

Illegal modification of payment information may result in loss of money and this may again results in loss of customer confidence. Alterations could be made to the transaction account numbers resulting in misdirected payments, to the payment amounts or to electronic balances on electronic. Another challenge in e-payment includes usage of a fraudulent web site by an attacker to collect credit card number and other personal and/or financial information.

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

### **2.11.2. Infrastructure**

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

The most common communication infrastructure for e-banking is computer network such as Internet. Most e-banking systems use internet to communicate with their customers. The other communication infrastructure available for e-banking users is the mobile network used for mobile phone. Automating the banking activities is another prerequisite for e-banking system. Closed financial network that links banks and other financial institutions is necessary. This network is usually used between banks or other financial institution for clearing and payment confirmation.

According to Kumaga (2010), low level of internet penetration and poorly developed telecommunication infrastructure impede smooth development and improvements in ecommerce in developing countries. In this regard, a study made by Microfinance Nigeria (2010) indicated that efforts made by the Nigerian government and other financial and ICT stakeholders to move Nigeria's payment system from a cash-dependent platform to the globally acceptable electronic-driven alternative way is impeded by shortage of well-developed telecommunication infrastructure. Another major problem that relates to this is frequent electric power disruption. This will create lot of problems in e-banking activities which are basically depending on power supply. It will force the banks to depend on generators results in high operational cost. These problems are considered as obstacles for the expansion of e-banking services.

### **2.11.3. Regulatory and Legal Issues**

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

According to Mishra (2009), the virtual and global nature of e-payment also raises legal questions such as which jurisdiction will be competent and about applicable laws in disputed cases, validity of electronic data, electronic contracts, and electronic signature. Moreover, a legal and regulatory framework that builds trust and confidence supporting technical efforts to meet the same is another important issue that needs to be addressed. In this regard legislative support is essential for protecting the interests of customers and banks in various areas relating to e-banking and payment systems. Some of the main issues like liability for loss in case of fraud, allocation of loss in case of insolvency, cheque truncation, evidence and burden of proof, preservation of records, prevention of fraud are to be cleared in the legislation (ECB, 2002). This can be done by adopting model laws at global level such as UNCITRAL Model law on e-commerce (1996), on e-signatures (2001) and at regional level such as the SADC Model law on Electronic Transaction and Data protection (Mishra, 2009).

#### **2.11.4. Socio-Cultural Challenges**

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

According to Kumaga (2010) consumer's confidence and trust in the traditional payment system has made customers less likely to adopt new technologies. New technologies will not dominate the market until customers are confident that their privacy will be protected and adequate assurance of security is guaranteed. New technology also requires the test of time to earn the confidence of the people, even if it is easier to use and cheaper than older methods.

#### **2.11.5. Other Challenges**

There are other challenges which can be considered as hindrances in the implementation of e-banking services. One of these issues is the standardization of software which is necessary to offer e-banking services. Proven high quality software is a must for high-tech banking services. For sophisticated types of services, the standardization of operating systems, systems software and application software throughout the banking industry is a necessary condition, which may have to be pursued (Muvva and Sisay, 2011).

According to Husni and Noor (2011), the provision of e-banking services require heavy investment costs. In this regard banks have to invest huge amount of money in order to provide e-banking services. They have to buy and install the required systems and facilities which lead increased establishment expense. They have to incur heavy maintenance costs also. But in case of new and small banks, they have to face financial problems at the initial stage. Banks in developed countries have already deployed huge amount of investments for e-banking services. For banks in developing and underdeveloped countries, this may create financial crisis (Ibid, 2011).

### **E-BANKING CHALLENGES IN ETHIOPIA**

Low level of internet penetration and poorly developed telecommunication infrastructure: Lack of infrastructure for telecommunications, Internet and online payments impede smooth development and improvements in e-commerce in Ethiopia. Most rural areas of the country, where the majority of small and medium businesses are concentrated, have no Internet facilities and thus are unable to engage in e-commerce activities.

Lack of suitable legal and regulatory framework for e-commerce and e-payment and inadequate banking system: Ethiopian current laws do not accommodate electronic contracts and signatures. Ethiopia has not yet enacted legislation that deals with e-commerce concerns including enforceability of the validity of electronic contracts, digital signatures and intellectual copyright and restrict the use of encryption technologies.

Political instabilities in neighboring countries: Political and economic instabilities in Somalia, Southern Sudan, and Eritrea are threatening traits that do not provide a very conducive environment for e-banking in Ethiopia. Political instabilities inevitably disturb smooth operations of business and free flow of goods and services. High rates of illiteracy: Low literacy rate is a serious impediment for the adoption of E-Banking in Ethiopia as it hinders the accessibility of banking services. For citizens to fully enjoy the benefits of E-Banking, they should not only know how to read and write but also possess basic ICT literacy.

High cost of Internet: The cost of Internet access relative to per capita income is a critical factor. Compared to the developed countries, there are higher costs of entry into the e-commerce market in Ethiopia. Most of the banking-transactions currently taking place use

credit and debit cards supplied by Visa and MasterCard. For conducting e-banking, the use of credit or debit cards is mandatory thus requiring the need for specialized systems which are not currently available.

Frequent power interruption: Lack of reliable power supply is a key challenge for smoothly running e-banking in Ethiopia. Resistance to changes in technology among customers and staff due to Lack of awareness on the benefits of new technologies, Fear of risk, Lack of trained personnel in key organizations, Tendency to be content with the existing structures, People may be resistant to new payment mechanisms.

Cyber security issues: Cyber security is a global challenge that requires global and multi-dimensional response with respect to policy, socio-economic, legal and technological aspects. E-banking applications represent a security challenge as they highly depend on critical ICT systems that create vulnerabilities in financial institutions, businesses and potentially harm banking customers. It is imperative for banks to understand and address security concerns in order to leverage the potentials of ICTs in delivering E-banking applications. In the deployment of e-banking application, attention should be drawn to the prevention of cybercrime (ITU4D, 2006).

## **2.12. Knowledge Gap**

Previous research in Ethiopian are focus on impact of investment on electronic banking on the performance of commercial banks in Ethiopia, barriers of electronic banking from both customer side and bank side. As per the knowledge of the researcher only a very limited number of researches have been done on e-banking in Ethiopian Banking like that of (Ayana, 2012), (Gardachew, 2010), (Kassahun Girma, 2016), (Meaza Wondimu, 2013), (Abebe Zeleke, 2016) and (Mattewos Kinfu, 2016). Therefore, more studies are still required to assess challenges and opportunity of E-banking in the country to identify areas in which the country lags behind their E-banking adoption and diffusion.

This study is therefore, intending to fill the gap by describing the challenges and opportunities of Nib International bank e-banking technology have been done to highlight these problems faced by the different banks.

## CHAPTER THREE

### 3. METHODOLOGY

#### Introduction

This chapter describes the approaches, procedures and techniques that are used to gather the data needed to achieve the research objectives. According to Saunders, Lewis and Thornhill (2007), research is carried out with the intent to find out things in a systematic or methodical manner, thus increasing knowledge. Hence, research is grounded on logical relationships and not just beliefs (Ghauri & Gronhaug, 2005). This chapter explains the detail methodology, showing the research design that discusses research purpose, research approaches, research strategy, data source and method of data collection, data analysis method.

#### 3.1. Research Design

As per Creswell (2003) there are three approaches that are used in conducting a given research. These are quantitative, qualitative and mixed research approach. Quantitative research approach focuses primarily on the construction of quantitative data, and quantitative data is a systematic record that consists of numbers constructed by researcher utilizing the process of measurement and imposing structure (Kent, 2007). The quantitative research approach employ measurement that can be quantifiable while the qualitative approach cannot be measured (Bryman & Bell, 2007). In mixed research approach inquirers draw liberally from both qualitative and quantitative assumptions (Creswell, 2009).

The research under subject will be conducted using mixed research approach; the rationale for combining both quantitative and qualitative data is to better understand the research problem by combining both numeric values from quantitative research and the detail of qualitative research and to neutralize limitations of applying any of a single approach. According to Creswell (2009), the mixed research approach uses separate quantitative and qualitative methods as a means to offset the weaknesses inherent within one method with the strengths of the other method.

To see opportunities and challenges of E-banking services in NIB International bank of Ethiopia especially in Addis Ababa area, the concurrent mixed method design is used.

The concurrent triangulation approach is probably the most familiar of the major mixed method models. It is selected as a model when a research uses two different methods in an attempt to confirm, cross validate, or corroborate findings within a single study (Creswell, 2009). In this case, the quantitative and qualitative data collection is concurrent, happening in one phase of the research.

### **3.2. Research purpose**

There are three types of academic researches depending on the problem area and the nature of the phenomenon that it studies. The purpose of the research can be Exploratory which deals with unknown problem, Descriptive in which there is an awareness of the problem and Explanatory, where the problem is clearly defined (Ahmed 2011).

The purpose of this thesis is to conduct descriptive research in order to gather as much information as possible concerning the practice of identify the challenges and opportunity of e-banking service in Nib international bank. This research were focused on describing the current situation of the problem and answer the research questions which are in the form of “what”, and to highlight the most important factors that challenges and opportunity of e-banking service Therefore, descriptive research was being used in to fulfill this approach.

### **3.3. Research approach**

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

### **3.4. Population and sampling**

A target population refers to the entire group of individuals, objects or things that share common attributes or characteristics and may not be found within the same geographical location. According to Mugenda (2008), target population is the total population that the researcher specifies in his or her research. In order to undertake this study, the researcher sampled Eight branches of NIB International bank in Addis Ababa city namely Addis Ketema, Africa Avenue, Arada, Tulu Dimtu, Akaki, Torhayloch, Urael, Bambis, Bole



Medhanealem, Gotera, Shola, Nefas Silk. Therefore customers of these branches who are using any of E-banking service are considered as target population of the study. And the populations of this study were all employees' e-banking professionals' in E-Banking department working in NIB International bank at head office.

### **3.5. Source of Data**

There are two types of data which is usually used in researches, primary and secondary data. Primary data does not actually exist until and unless it is generated through the research process as part of the consultancy or dissertation or project. It will often be collected through techniques such as experimentation, interviewing, observation and surveys. On the other hand Secondary data is information which already exists in some form or other but which was not primarily collected, at least initially, for the purpose of the consultancy exercise at hand. In fact, secondary data is often the start point for data collection in as much as it is the first type of data to be collected (Creswell, 2009).

This study used primary and secondary source of data. In order to collect the primary data the researcher distributed structured questionnaires to relevant participants. The study is mainly based on the primary data source and the secondary also. For general concept development about the short survey in primary sources and questionnaire used for collecting data about in challenge and opportunity of e-banking service of NIB international bank. The types of primary data that are used in this research involve both open ended interview and questionnaire delivered to existing customers of the bank. In order to strength the result and findings of the study the researcher examined different local and international articles related with issues of E-banking service, books and academic journal research reports, from web site annual reports and magazines, as secondary data.

### **3.6. Source of Data and Collection Instrument**

The necessary data for this study is collected from primary sources. In order to gather the data from relevant sources, primary data collection instrument is used. The survey instrument, questionnaire was developed using technology-organization-environment framework. The questionnaire was structured in closed-ended type of questions and responses to the questions were measured on a five Likert rating scale. The questionnaire was divided into two sections. Section one captured general information about the respondents while section captured

information about the environmental technological and operational factors of E-banking services and perceived benefits of using e-banking system. Five point Likert scales that are: 1 (strongly disagree), 2 (Disagree), 3 (Neutral), 4 (Agree), 5 (strongly agree) are used for the bank customers and e-banking Staffs.

### **3.7. Data Processing and Analysis Techniques**

The collected data was analyzed using quantitative and qualitative techniques. The research analysis was conducted with the help of statistical tool called SPSS (statistical package for the social sciences). Descriptive statistics was used mainly to organize and summarize the demographic data of the respondent. The relevant information was obtained in a standard form using tables, frequencies and percentages to analyze and interpret the information. The results were finally presented in tables to ensure easy understanding of the analyses.

#### **3.7.1. Questionnaires**

According to Yin (2003), structured questioners are important method for collecting primary data and that it further allows the research to be well focused on specific research topic. The questionnaire was used because it is considered to be more convenient as Challenges and Opportunities of Electronic Banking in Nib international bank.

## CHAPTER FOUR

### 4. RESULTS AND DISCUSSION

The collected data using different techniques were analyzed in this chapter. A total of 88 respondents were involved at head office of NIB International bank in both staff and customers. The questionnaire prepared for staff and customer were different. In order to analyses the collected data were entered into Statistical Package for the Social Sciences (SPSS) software.

#### 4.1. Demographic information of the respondents

The study participant's demographic characteristics of staff and customers at the head office of NIB International bank in Addis Ababa in the study were analyzed using descriptive analysis with the help of SPSS. The result of the study was presented in table 1 as follow:-

Table 1: Respondents' Demographic profile

Characteristics	Frequency	Percent
Types of respondents		
Staff	36	40.9
Customer	52	59.1
Gender		
Male	50	56.8
Female	38	43.2
Age		
15-24	20	22.7
25-35	56	63.6
36-50	12	13.6
Educational background		
Diploma	8	9.1
First degree	56	63.6
Second degree	16	18.2
Other	8	9.1

Source: survey result, 2020

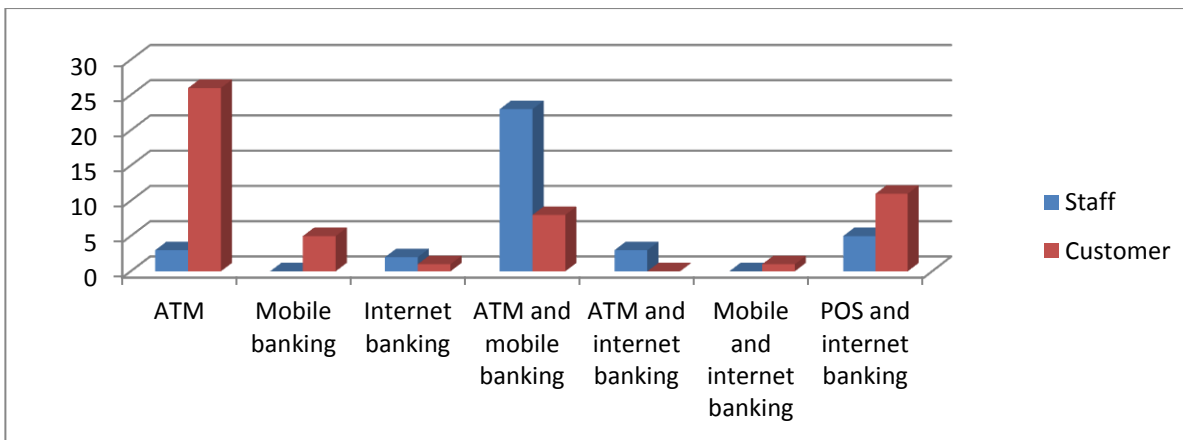
The result showed that majority (59.1%) of participants was customers. Among the 88 participants, 50 (56.8%) were male and 38 (43.2%) constitutes female. In the case of classification of respondents by age, 63.6% of 88 respondents were categorized with age group of 25 to 35, 22.7% with age group of 15 to 24, and 13.6% of 36 to 50. Regarding the educational background as indicated in the above table 63.6% of the respondents were having first degree followed by having second degree which constituted 18.2%.

## 4.2. Challenges and opportunities in E-banking system

### 4.2.1. Type of electronic banking service delivery mostly use/provide

The type of Electronic banking services the staff they provided/the customer they used was ATM and mobile banking (19.3%), ATM (33.0%), POS and internet banking (18.2%), Mobile banking (5.7%), internet banking and with ATM (each 3.4% respectively) and mobile and internet banking (1.1%).

Figure 1: Type of electronic banking service delivery mostly used/provide



Source: survey result, 2020

### 4.2.2. Opportunities of E-banking system

An opportunity that is expected to be gained from the practice of E-banking covers both direct and indirect benefits for the banking industries, customers and for the economy. Direct benefits include savings on operational cost, improved organizational functionality, productivity gain, improved efficiency, saving of time and increased profitability. Indirect benefits include the opportunity or intangible benefits such as improved customer's satisfaction through improved services, improved banking experience and fulfillment of their changing needs and lifestyle (Lu 2005; Kuan 2001 & Iacouou 1995).

In order to access E-banking services, it is important that bank should have ICT infrastructure and internet facility available to facilitate their customers with all kinds of E-banking services. Pikkarainen et al. (2004) argued that bank must have an official website which facilitates customers to perform all kinds of E-banking transaction so that, It saves customer cost and time as adopting E-banking system. Customer can make transactions from their home. Polatoglu et al. (2001) suggests many benefits associated with E-banking. Customer can pay their bills, can pay their loans, credit and debit card facilities. In other words it provides freedom from location, saves time and cost. This research wants to approve such global truth are also working for the case of Ethiopia.

#### 4.2.2.1. *Nib International Bank Staff response*

##### 4.2.2.1.1. Operational Benefits

It should be noted that E-banking can bring about various benefits for banks. According to some literature the basic benefit of E-banking for the bank are cost savings, efficiency, gaining new segments of customers, improvement of the banks reputation and better customer services and satisfaction are primary benefits to banks (Jayawardhena& Foley, 2000).

Table 2: Mean of operational benefits of e-banking

Item	Frequency	Mean	S.D
e-banking reduces paper work	36	3.31	1.26
e-banking has low transaction cost	36	3.44	0.88
e-banking increase reliability and reducing errors;	35	3.09	1.17
e-banking facilitates development of new products and new business in the banking industry;	36	3.22	1.12
e-banking is convenient, in terms of 7 days and 24 hours services	36	4.19	5.04
e-banking enhance accessibility of the bank's services;	36	3.28	1.09
e-banking overcome geographical limitations;	36	3.17	1.08
e-banking improves customer service;	36	3.33	1.15
e-banking improving transaction speeds	36	3.42	1.11

Cost minimization is an important goal for business organization in addition to profit maximization. we can see cost minimization as an advantage of using the system from two perspectives, first from the bank perspectives, by using E-banking system like, ATM, internet banking, mobile banking and others, banks save a lot of costs. In the long run a bank can save money by not paying for tellers or for managing branches. This way of cutting transaction cost results in higher profit margin for the banks. D'Souza (2002) noted that, the combination of higher technology and higher skills have posted a higher turnover for banks as they have been able to provide better. The mean and S.D value of the respondent in relation with the question that e-banking has low transaction cost is 3.44 and 0.88 respectively. Majority of the respondents agreed that it is a cost efficient and cost effective ways of providing banking service.

Similarly the mean and S.D for the question which is asked whether e-banking improving transaction speeds is 3.42 and 1.11 respectively; it indicates that using of e-banking system helps the bank improving transaction speeds to perform banking activity quickly by employing a low amount of resources. Majority of them is also agrees that the work of employees are speed up using E banking rather than traditional banking.

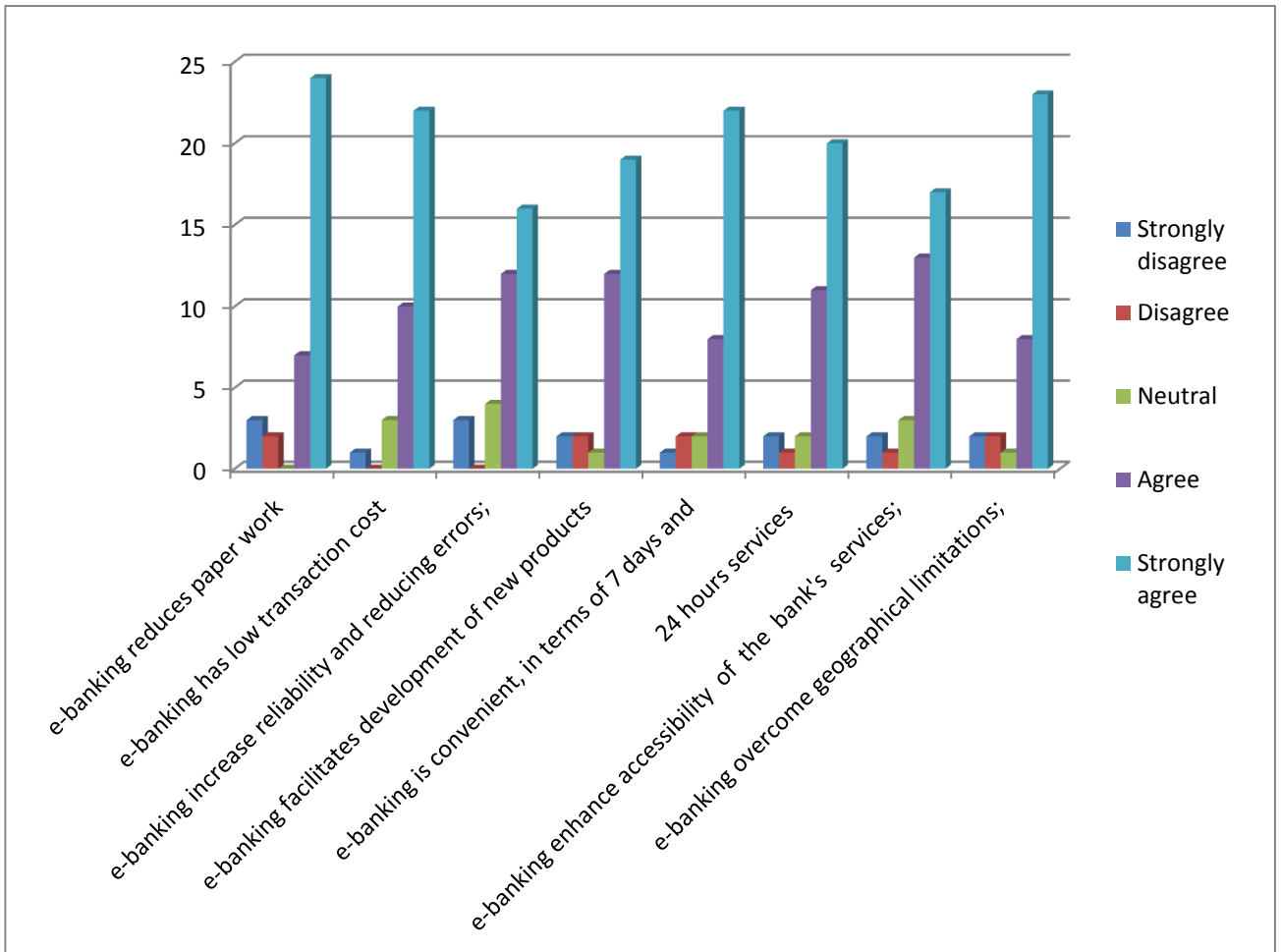
Banks using e-banking can improves customer service. On the bases of the above point the respondents asked whether e-banking improves customer service. The mean and the S.D of this question is 3.33 and 1.15 respectively. The largest number of respondents agreed that e-banking improves customer service. The mean and S.D of the questions in relation with e-banking reduces paper work is 3.31 and 1.26 respectively.

The respondents asked whether e-banking facilitates development of new products and new business in the banking industry. The mean and the S.D of this question is 3.22 and 1.12 respectively. The largest number of the respondents agreed that e-banking facilitates development of new products and new business in the banking industry.

If banks can use sufficient technological tools to deliver service, such as ATM, Internet, Mobile and POS terminal, it would overcome geographical limitations to get banking service. So, it can reduce number of customers come to banking hall compared with traditional banking system. And according to the respondents whether e-banking overcome geographical

limitations, the mean and the S.D of the respondents is 3.17 and 1.08 respectively. The largest number of the respondents is strongly agreed that using e-banking the bank can overcome geographical limitations.

Figure 2: Operational benefit of e-banking



#### 4.2.2.2. Nib International Bank customer response

##### 4.2.2.2.1. Environment

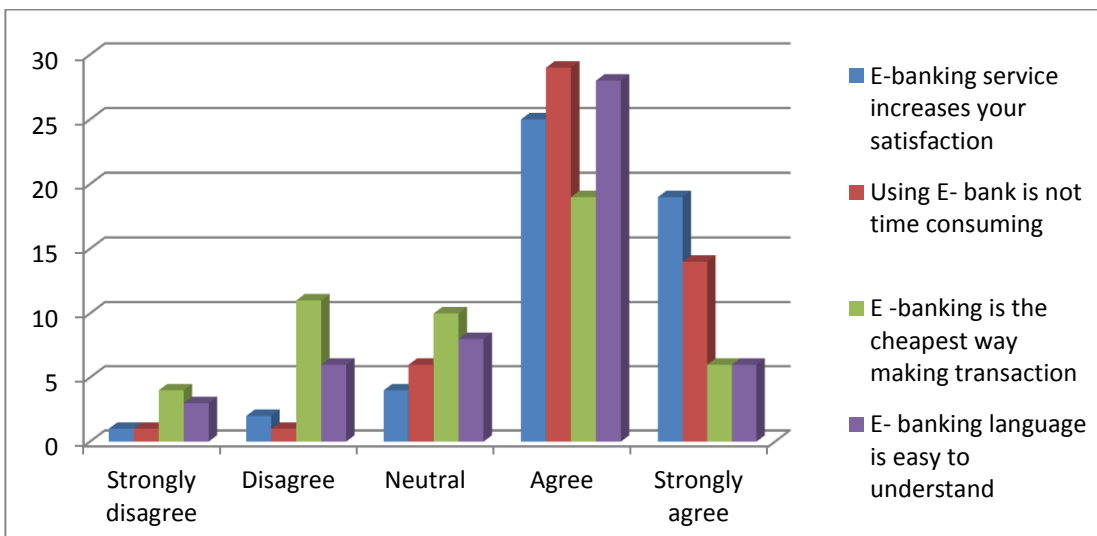
E-banking can bring about various benefits for customers and banks as well. According to some literature the basic benefit of E-banking for customers and the bank are cost savings, efficiency, gaining new segments of customers, improvement of the banks reputation and better customer services and satisfaction (Jayawardhena & Foley, 2000).

Table 3: Mean Benefit of E-banking for customers

Item	Frequency	Mean	S.D
Using E- bank is not time consuming.	51	3.16	0.88
E-banking service increases your satisfaction.	51	3.06	0.81
E -banking is the cheapest way making transaction	50	2.24	1.17
E- banking language is easy to understand	51	2.55	1.05

The mean and S.D of the question “using e-banking is not time consuming” is 3.16 and 0.88 respectively. The largest number of respondents agreed that E-banking is not time consuming for customers. Regarding the satisfaction level of customers about e-banking, the mean and S.D of the questions in relation with increasing customer satisfaction is 3.06 and 0.81 respectively. And this showed that E-banking service increases customer satisfaction.

Figure 3: Customer benefits of e-banking



#### 4.2.2.2.2. Technology

The benefit of E-banking for customers in technology wise can be seen in respect with its easiness to use, convenience, accessibility, using the service with low price or cheap, speed, safety, privacy and getting information in real time base. Regarding ease of use as a benefit of practicing E-banking system, respondents were asked whether they `strongly agreed, Agreed,



Neutral, and Disagreed or strongly disagreed". Mean and S.D value are 3.02 and 1.04 respectively, which indicates the largest respondents agreed that E- bank protects their privacy and transaction information.

From the perspective of customer's privacy, where the mean and S.D of the question related with E-banking service protects customer's private data is 3.08 and 1.007 respectively.

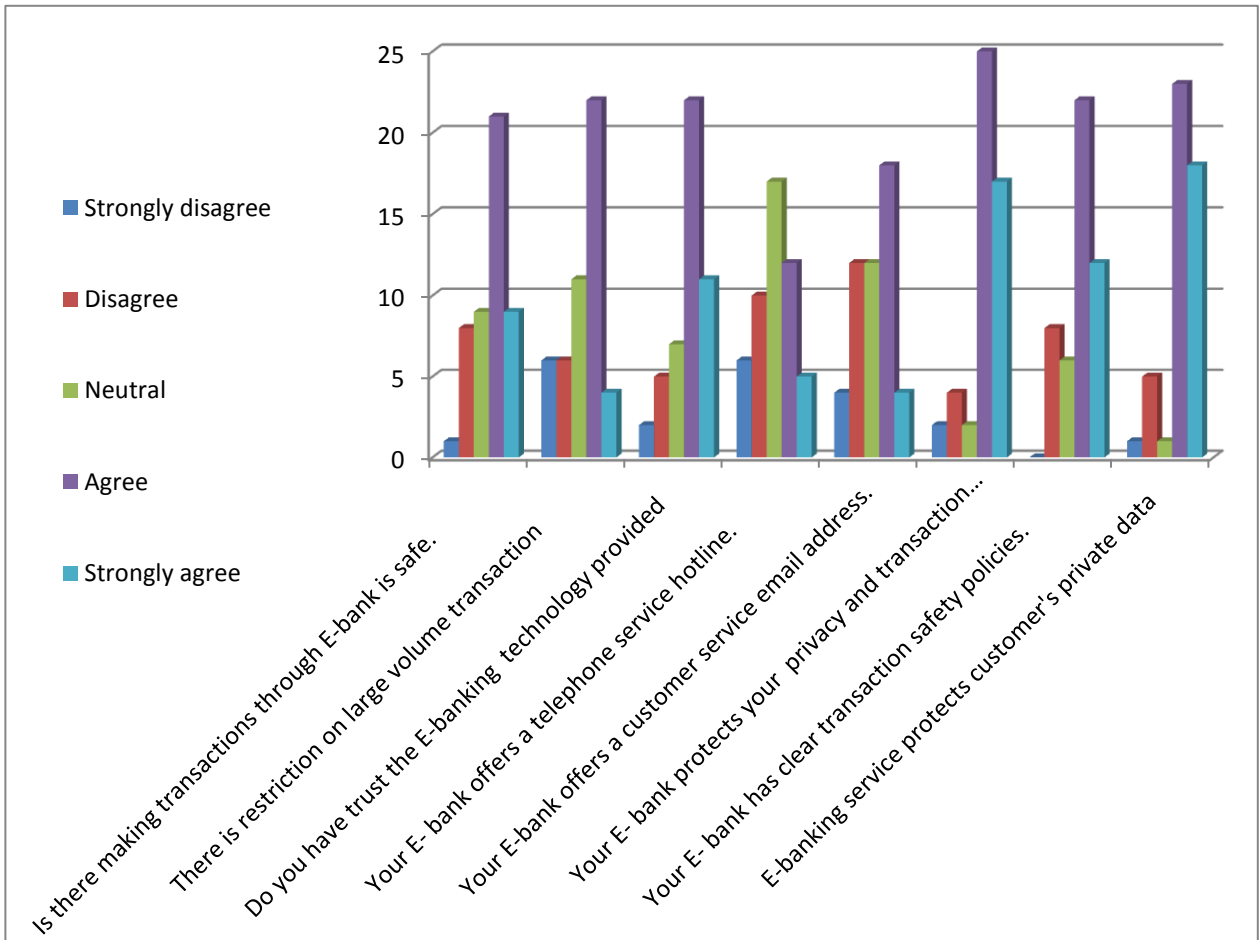
Majority of respondents strongly agreed that E-banking service protects customer's private data, which showed E-banking is a very convenient instrument for protecting customer's data in the banking activity.

Table 4: Mean technological benefit of E-banking for customers

Item	Frequency	Mean	S.D
Is there making transactions through E-bank is safe.	48	2.60	1.05
There is restriction on large volume transaction	49	2.24	1.16
Do you have trust the E-banking technology provided	47	2.74	1.07
Your E- bank offers a telephone service hotline.	50	2.00	1.16
Your E-bank offers a customer service email address.	50	2.12	1.12
Your E- bank protects your privacy and transaction information	51	3.02	1.04
Your E- bank has clear transaction safety policies.	50	3.02	1.04
E-banking service protects customer's private data	51	3.08	1.01

The respondents replied for the question "Your E- bank has clear transaction safety policies" that majority of them agreed with the mean and S.D of 3.02 and 1.04 respectively. Regarding the customer's trust, the mean and S.D showed for the question "Do you have trust the E-banking technology provided" is 2.74 and 1.07 respectively. This showed that majority of them trusted the E-banking technology provided.

Figure 4: Technological benefits of e-banking for customers



### 4.2.3. Challenges of E-banking practice

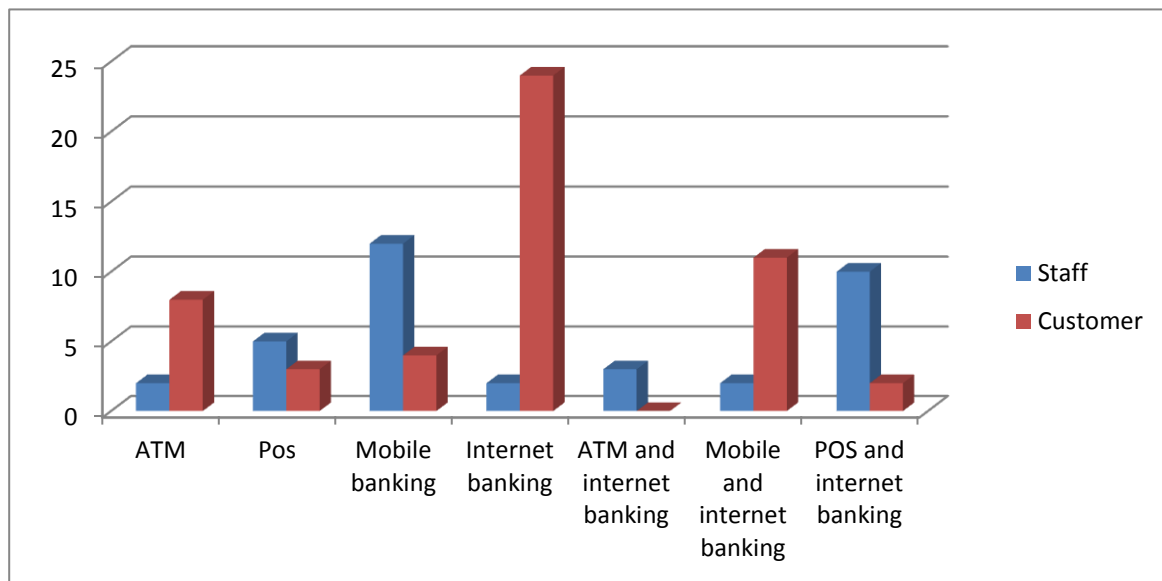
Although there are many associated benefits with the practice of E-banking, there are many reasons which obstruct implementation of the system. In case of Ethiopian banking industries, many private banks are using old banking system and don't have access to take advantage from electronic banking facilities. Wondwossen & Tsegai (2005) observed the following reasons which may be considered as hindrance factors for the use of electronic payment system in Ethiopia. These hindrance factors include, lack of appropriate infrastructure for E-payment, lack of internet facilities with customer and learning how to interact with bank website. Moreover, factors that can affect practice of E-banking in the country regarding the technological factor, organizational factor and Environmental factor were analyzed in the following sections.

#### 4.2.3.1. Nib International Bank Staff response

##### 4.2.3.1.1. Technological challenges

The staffs and customers of Nib international bank responded that the customer's basic challenges about the technological innovations used were internet banking (29.5%), followed by mobile banking (18.2%), Mobile and internet banking (14.8%), POS and internet banking (13.6%), ATM (11.4%), POS (9.1%) and ATM and internet banking (3.4%).

Figure 5: The customer's basic challenges with the technological innovations used



##### 4.2.3.1.2. Organizational factors

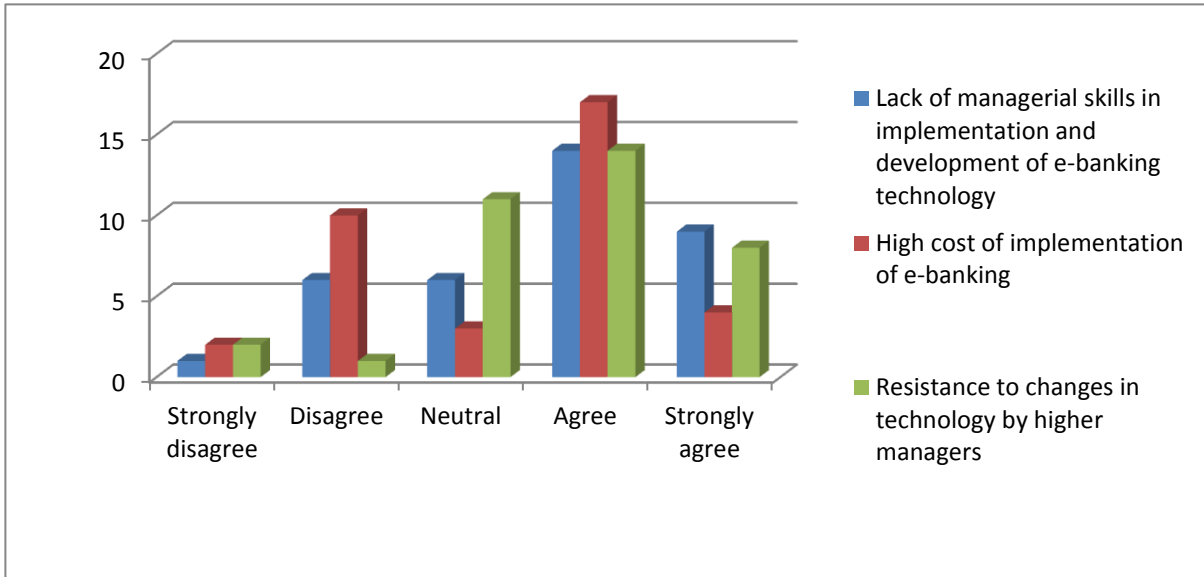
Table 5: Organizational Factors

Item	Frequency	Mean	S.D
There is lack of managerial skills in implementation and development of e-banking technology	36	2.67	1.12
There is high cost of implementation of e-banking	36	2.31	1.17
There is resistance to changes in technology by higher managers	36	2.69	1.04

Note: Frequency-Number of responses; Response measurements, 4-strongly agree, 3-Agree, 2-Neutral, 1-Disagree and 0-Strongly disagree.

Regarding the organizational factor, the basic challenges of banks were lack of managerial skills in implementation and development of e-banking technology, high cost of implementation of e-banking and resistance to changes in technology by higher managers.

Figure 6: Organizational factors



#### 4.2.3.1.3. Environmental Factors

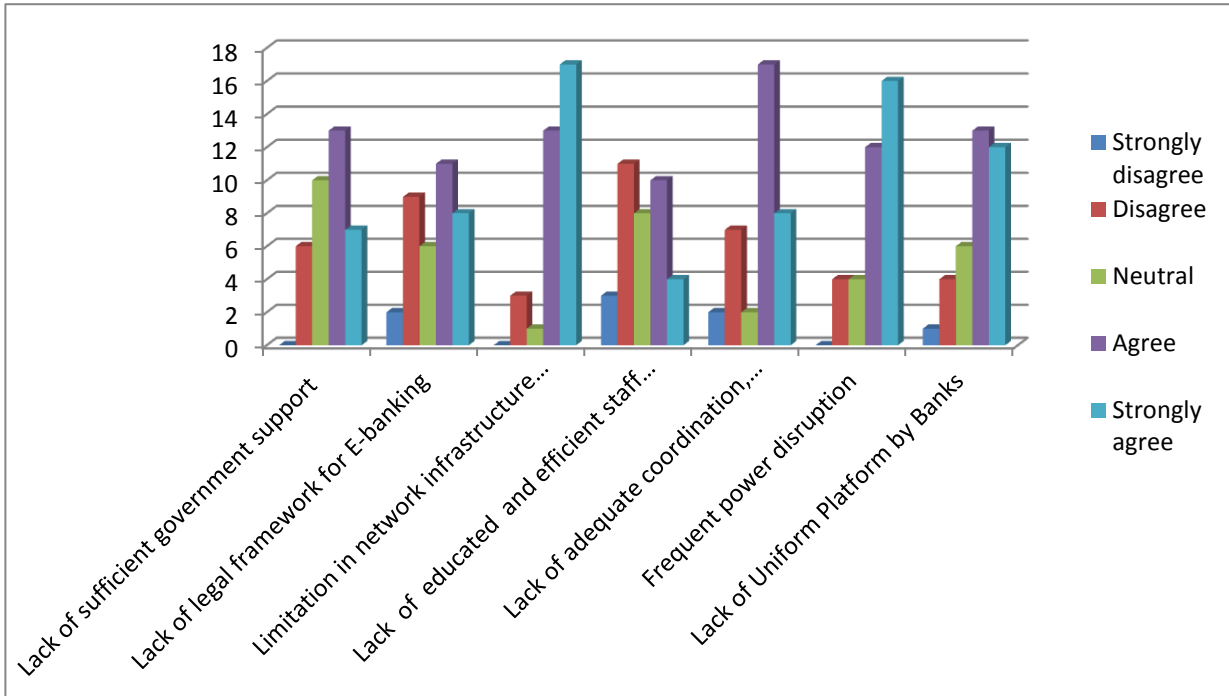
Table 6: Environmental Factors

Item	Frequency	Mean	S.D
There is lack of sufficient government support	36	2.58	1.00
There is lack of legal framework for E-banking	36	2.39	1.25
There is limitation in network infrastructure and internet related support services	34	3.29	0.91
There is lack of educated and efficient staff in e-banking context	36	2.03	1.18
There is lack of adequate coordination, interaction and cooperation between banks in e-banking context	36	2.61	1.20
There is frequent power disruption	36	3.11	1.01
There is lack of Uniform Platform by Banks	36	2.86	1.10

Respondents were asked about the effect of environmental factors using the seven variables shown in above table as a measurement. The result of the response indicates mean value of between 2.03 and 3.29, which means that except “lack of educated and efficient staff in e-

banking context” respondents agreed with the idea that environmental factors as the challenges of E banking services.

Figure 7: Environmental factors



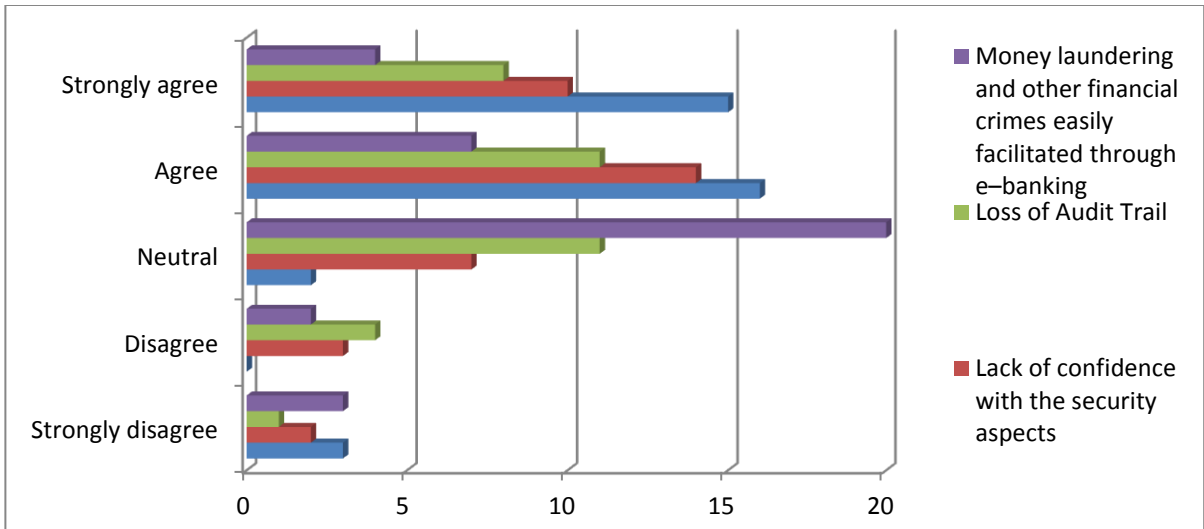
4.2.3.1.4. Technological Factor

Table 7: Technological Factors

Item	Frequency	Mean	S.D
There is limitation in ICT infrastructure	36	3.11	1.12
There is lack of confidence with the security aspects	36	2.75	1.13
There is loss of Audit Trail	35	2.60	1.06
There is Money laundering and other financial crimes easily facilitated through e–banking	36	2.19	1.01

Respondents were asked about the effect of technological factors in the E banking services using the above four variables shown in the table. The result of the response indicate mean value of between 2.19 and 3.11, which means that except “Money laundering and other financial crimes easily facilitated through e–banking” respondents agreed with the idea that technological factors has an effect in E banking services in Nib International Bank.

Figure 8: Technological Factors



#### 4.2.3.1.5. Factors in Nib International Bank as challenges for implementation of e-banking

Different literature stated that the challenge of e-banking in the implementation stage are absence of legal frame works, less penetration of internet and strong ICT infrastructure, competitive pressure and government support, high rates of illiteracy, culture of the society, existence of cash based society, power interruption problem, and the like. The result obtained from survey is presented in the following sections.

Table 8: Factors in Nib International Bank as challenges for implementation of e-banking

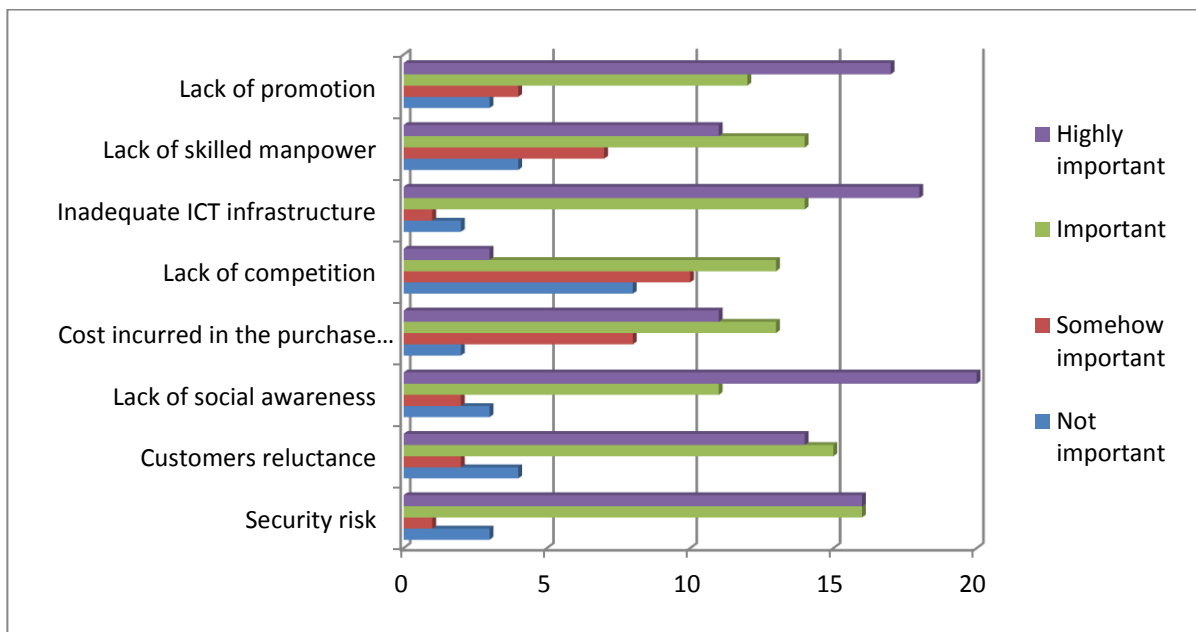
Item	Frequency	Mean	S.D
Security risk	36	4.17	1.11
Customers reluctance	36	3.89	1.39
Lack of social awareness	36	4.25	1.16
Cost incurred in the purchase of technological instruments	34	3.91	1.06
Lack of competition	34	3.09	1.31
Inadequate ICT infrastructure	35	4.31	0.99
Lack of skilled manpower	36	3.78	1.22
Lack of promotion	36	4.11	1.17

Results reported on table above showed that mean and S.D values show for the question which states about high rates of lack of social awareness affect the implementation of E-banking service were 4.25 and 1.16 that means, the largest number of respondents were

strongly agreed that lack of social awareness affect the practice of E-banking. Likewise, the mean and S.D value for the question in relation with Inadequate ICT infrastructure affect the implementation of E-banking were 4.31 and 0.99 respectively. This implies that ICT infrastructure in Ethiopia for internet access is not sufficient to use E-banking service. Therefore, one of the major obstacle factor identified in this study is inadequate ICT infrastructure, to use E-banking service, such as internet banking, mobile banking, ATM and others.

The mean and S.D value of respondents for the question related with risk of security for E-banking is 4.17 and 1.11, which implies respondents are agreed that risk of security for E-banking affect the implementation of E-banking. As it is depicted on the above table, respondents were asked whether, customer reluctance affect the implementation of E-banking practice in Nib International Bank and the mean and S.D value gives 3.89 and 1.39 respectively. By looking the mean value of 3.89, respondents agreed with the idea that customer reluctance affects implementation of E-banking practice.

Figure 9: Factors in Nib International Bank as challenges for implementation of e-banking



#### 4.2.3.2. Nib International Bank customer response

##### 4.2.3.2.1. Service

The table below showed that the Nib International Bank customer response about the services of the bank that challenge e-banking use.

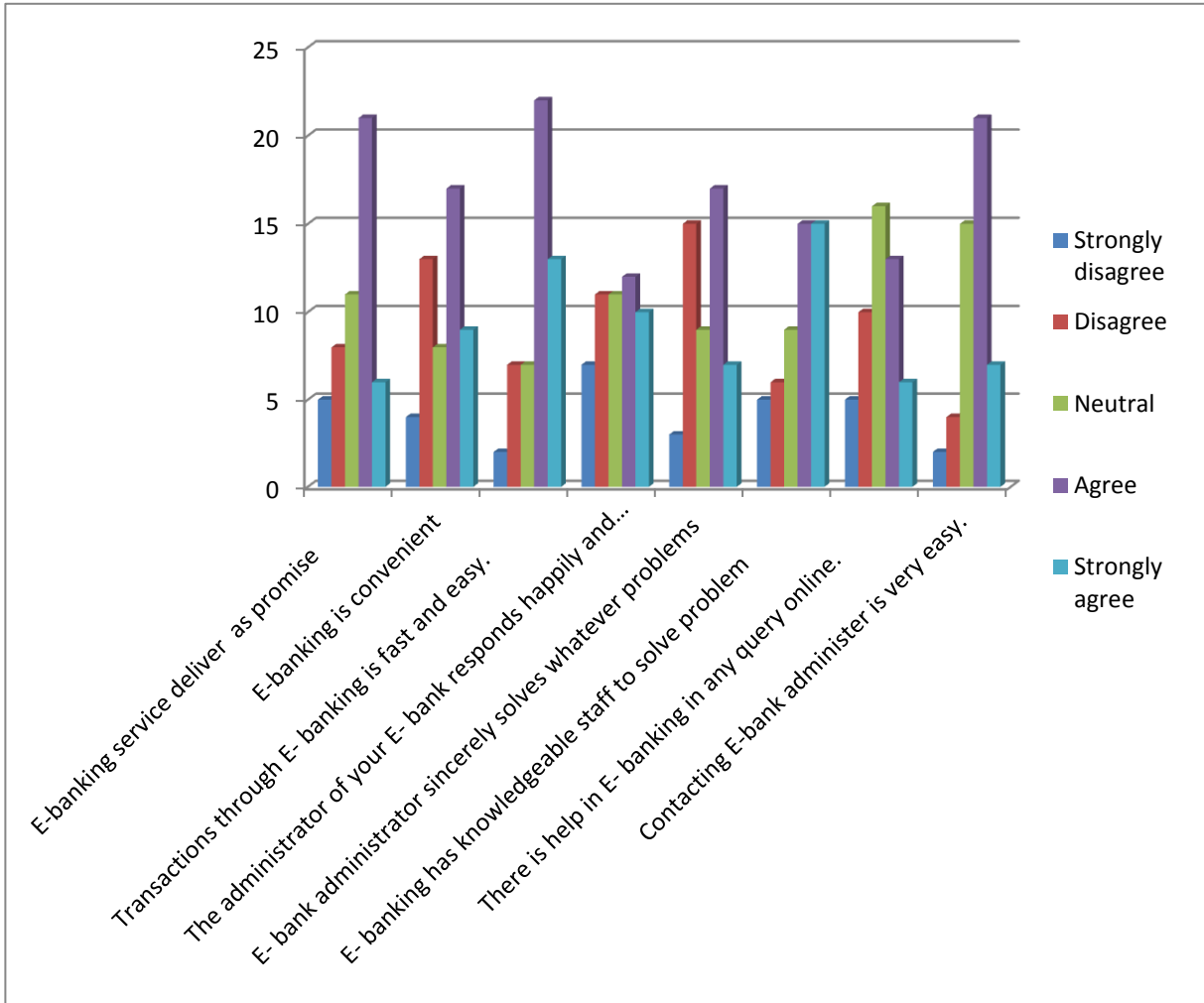
Table 9: Challenges of customer in receiving e-banking services

Item	Frequency	Mean	S.D
E-banking service deliver you have got exactly as promise	51	2.29	1.17
E-banking is convenient, in terms of 7 days and 24 hours services i.e. Accessibility; i.e. No time limit to access bank account and information	51	2.27	1.25
Is there Completing transactions through E- banking is fast and easy.	51	2.73	1.12
The administrator of your E- bank responds to your needs happily and rapidly.	51	2.14	1.34
Your E- bank administrator sincerely solves whatever problems you encounter.	51	2.20	1.18
E- banking has knowledgeable staff to solve problem	50	2.58	1.31
There is help in E- banking in any query online.	50	2.10	1.17
Contacting E-bank administer is very easy.	49	2.55	0.98

The result of the finding showed that the mean and S.D values is 2.10 and 1.17 respectively, which implies that the largest number of the respondents were not agreed that there is help in E- banking in any query online. The respondents in relation with the administrator of your E- bank responds to your needs happily and rapidly were not agreed with the mean and an S.D value was 2.14 and 1.34 respectively. In regard to this, the respondents were asked whether E-banking service deliver you have got exactly as promise. The mean and S.D value of the respondents were 2.29 and 1.17, which implies respondents were not agreed that E-banking service deliver exactly as promise.



Figure 10: Challenges of customer in receiving e-banking services



## **CHAPTER FIVE**

### **5. SUMMARY OF THE FINDINGS, CONCLUSION AND RECOMMENDATION**

This study was intended to assess the practice of E-banking system in Nib International Bank main branch. The purpose of this chapter is to describe the summary of findings followed by conclusion and presents recommendations.

#### **5.1. Summary of findings**

Based on the analysis and interpretation made in the previous chapter, the major findings are summarized as follows.

The study indicated that the basic benefits of E-banking for the staff and customers of Nib international Bank main branch available. The benefits of E-banking for staffs are Operational Benefits such as reduces paper work, improving transaction speeds, increase reliability and reducing errors, facilitates development of new products and new business in the banking industry, convenient, enhance accessibility of the bank's services, overcome geographical limitations, improves customer service and has low transaction cost.

E-banking has its own environmental and technological benefits for customers too such as E-bank is not time consuming, increases satisfaction, cheap, easy language to understand, transactions through E-bank is safe, protects customer's private data, trust, protects privacy and transaction information, has clear transaction safety policies and there is restriction on large volume transaction. Most of the respondents agreed that the benefits of E-banking for banks are simplification of banking task, simplify works of employee, reduce costs per transaction and improve customer satisfaction. On the other hand, majority of the respondents agreed that e-banking: has low transaction cost, improving transaction speeds and speed up the work of employees, improves customer service, reduces paper work, facilitates development of new products and new business in the banking industry, the bank can overcome geographical limitations, is not time consuming, increases customer satisfaction,

protects their privacy and transaction information, protecting customer's data in the banking activity

Although benefits of E-banking is identified by respondents, there are also some challenges. The majority of the respondent agreed that the challenge of E-banking are technological innovations used, lack of managerial skills in implementation and development of e-banking technology, high cost of implementation of e-banking and resistance to changes in technology by higher managers, lack of educated and efficient staff in e-banking context and Money laundering and other financial crimes easily facilitated through e-banking. Furthermore, lack of social awareness, Inadequate ICT infrastructure, risk of security, customer reluctance, no help in any query online, service deliver is not exactly as promise were also the identified challenges in using e-banking.

There are identified reasons which obstruct implementation of the system. The considered hindrance factors for the use of electronic payment system in Nib international bank were lack of appropriate infrastructure for E-payment, lack of internet facilities with customer and learning how to interact with bank website. Moreover, factors that can affect practice of E-banking in the specified bank regarding the technological factor, organizational factor and Environmental factor were identified.

## **5.2. Conclusion**

Based on the main findings above, the following conclusions are drawn.

It is identified that Basic operational benefits of E-banking for the customers are convenience, accessibility, ease of use, low cost of using banking activity, providing real time information and getting quality service. It also identified that the basic benefits of E-banking for banks are simplifying works of employee, reduce costs of transaction, improve customer satisfaction, and attract new segment of customers. Furthermore, the study approves that increasing speed and efficiency, productivity, reliability and accessibility of financial service are the benefits of E-banking. The use of ATM, mobile banking, internet banking and others are not well practiced. This is due to low level of ICT infrastructure and lack of legal frame works at NBE, absence of adequate number of skilled man power.

The bank get different challenges to practice E-banking effectively because of High rates of illiteracy, low level of internet penetration and poorly developed ICT infrastructure, lack of suitable legal and regulatory framework for E-banking, frequent power interruption, fear of risk and unavailability of competent and skilled employee. In general, the findings of this study offer additional insights into the current E-banking situation and its implications for E-banking growth in Nib international bank. Furthermore, the understanding of the challenges of E-banking practice as well as benefits identified in this study may help to identify the best course of actions to promote its development.

### **5.3. Recommendations**

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

- Since E-banking has a wide range of benefits to the customers, the bank and for the Economy the concerned body should facilitate E-banking practice by creating a well-organized legal framework.
- For the successful implementation as well as practice of E-banking system, ICT infrastructure is a major prerequisite and hence the government should support banking sector by investing on ICT infrastructure development.
- The bank need to move forward in technology wise by focusing on cost reduction, customer retention, awareness creation, credibility, security, ease of use, and wider scope of products and services.
- To exploit the benefit of E-banking system, the Nib international bank should have strategies to create awareness for customers to familiarize the service and enjoy the benefit.
- The bank should pay special attention to deliver service to customers by using E-banking system, which can easily be accessible, convenience, reliable and which in turn maximize the satisfaction of customers.

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## Appendix

### Questionnaire

St. Mary's University School of Graduate Studies  
Department of Accounting and Finance  
MBA in Accounting and Finance  
Thesis Questionnaire for staff

#### Dear Sir/Madam

*My Name is Saba Debela , MBA student in Department of Accounting and Finance at St. Marry's University. The aim of this questionnaire is to identify the challenges and opportunity of E-banking service in Nib international bank. The information you provide in response to the items in the questionnaire will be used as part of the data needed for a study of challenges and opportunity of E-banking service in Nib international bank. The results of the study are anticipated to supply to the understanding of the basic challenges and opportunities of providing new technology in delivering of service in Nib international bank . I would like to assure you that the information you provide will be used only for the purpose of achieving academic award. Your involvement is regarded as a great input to the quality of the research results. Hence, I believe that you will enlarge your assistance by participating in the study. Your honest and thoughtful response is invaluable.*

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

*Yours faithfully,*

*Saba Debela*

*Tel Phone 0911-458346*

*Challenges and Opportunities of Electronic Banking in NIB International bank*

*Thank you for your participation*

*Best regards,*

*Saba Debela,*

*MBA student at St. Mary's University, School of Graduate Studies*

**Questionnaire for staff**

**Part I. Personal Information**

1.1. Gender                    1. Male                    2. Female

1.2. Age: \_\_\_\_\_ years

1.3. Work Experience: \_\_\_\_\_ years

1.4. Educational status:

- 1. College Diploma
- 2. First degree
- 3. Second degree (Masters)
- 4. PhD

**Part II. Challenges in E-banking system.**

2.1. What type of Electronic banking service do you provide?

- 1. ATM
- 2. Internet banking
- 3. Mobile and Agent banking
- 4. Others, please specify \_\_\_\_\_.

2.2. In what technological innovations use the customer's basic challenges you think?

- 1. ATM
- 2. POS
- 3. Internet banking
- 4. Mobile and agent banking
- 5. Others, please specify \_\_\_\_\_.

2.3. Are the following factors considered in your institution as challenges for the implementation of e-banking?

	Highly important	Important	Less important	Not important
1. Security risk				
2. Customers reluctance				

3. Lack of social awareness				
4. Cost incurred in the purchase of technological instruments				
5. Lack of competition				
6. Inadequate ICT infrastructure				
7. Lack of skilled manpower				
8. Lack of promotion				

2.4. Do you see any challenges in the service of e-banking in your institution?

1. Social challenges
2. Economic challenges
3. Legal challenges
4. Other challenges \_\_\_\_\_

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

1. Policy and procedures
2. Legal frame
3. Other, please specify \_\_\_\_\_

2.6. Any suggestions regarding using of e-banking service in the banking industry?

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### Part III. Questions regarding e-banking challenges and opportunities

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

Key: **Strongly disagree – 1**      **Disagree – 2**      **Neutral – 3**  
**Agree - 4**      **strongly agree - 5**

#### Challenges

3.1. Please indicate the extent you agree or disagree of the Potential challenges that affect to development use of e-banking technologies.

	<b>Organizational Factors</b>	1	2	3	4	5
1	There is lack of technical skills in implementation and development of e-banking technology					
2	There is lack of managerial skills in implementation and development of e-banking technology					
3	There is high cost of implementation of e-banking					

4	There is resistance to changes in technology by higher managers					
Please kindly state any other Barriers or challenges that the Banks faces in E-banking regarding organization						
_____						
_____						
-						
_____						
-						
<b>Environmental Factors</b>						
5	There is lack of sufficient government support					
6	There is lack of legal framework for E-banking					
7	There is limitation in network infrastructure and internet related support services					
8	There is lack of educated and efficient staff in e-banking context					
9	There is lack of adequate coordination, interaction and cooperation between banks in e-banking context					
10	There is frequent power disruption					
11	There is tight foreign currency regulation					
12	There is lack of Uniform Platform by Banks					
Please kindly state any other Barriers or challenges that the Banks faces in E-banking regarding the environment						
_____						
_____						
-						
_____						
-						
<b>14 Technological Factor</b>						
15	There is limitation in ICT infrastructure					
16	There is lack of confidence with the security aspects					
17	There is loss of Audit Trail					
18	There is Money laundering and other financial crimes easily facilitated through e-banking					
Please kindly state any other Barriers or challenges that the Banks faces in E-banking regarding the technology _____						
_____						
-						
_____						
-						

**Opportunities**

3.2. The following are some of the benefits the Banks realized from implementation of e-banking system, please indicate your choice.

**Operational Benefits**

		1	2	3	4	5
1	e-banking reduces paper work					
2	e-banking has low transaction cost					
3	e-banking enhances productivity in the banking industry					
4	e-banking enhances foreign currency generation;					
5	e-banking increase reliability and reducing errors;					
6	e-banking facilitates development of new products and new business in the banking industry;					
7	e-banking is convenient, in terms of 7 days and 24 hours services					
8	e-banking enhance accessibility of the bank's services;					
9	e-banking overcome geographical limitations;					
10	e-banking improves customer service;					
11	e-banking improving transaction speeds					

Please kindly state any other opportunities in the country that initiates the implementation of E-banking?

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Thank you!

**St. Mary's University School of Graduate Studies**  
**Department of Accounting and Finance**  
**MBA in Accounting and Finance**  
**Thesis Questionnaire for customer**

**Dear Sir/Madam**

I am MBA student in Department of Accounting and Finance at St. Mary's University. I am doing research on topic entitled "the challenges and opportunity of E-banking service in Nib international bank". I shall be great full if you help me in filling up the questionnaire with fair and frank responses. I assure that the information supplied will be kept strictly confidential and used for the academic research purpose only.

Thank you for your cooperation !!

**Questionnaire for Customers**

**Part I. Personal Information**

1.1. Gender            1. Male                            2. Female

1.2. Age: \_\_\_\_\_

1.3. Educational status:

- 1) Primary
- 2) High school
- 3) College Diploma
- 4) First degree
- 5) Second degree (Masters)
- 6) Above PhD

**Part II. Challenges and opportunities in E-banking system.**

2.1 What type of electronic banking service delivery mostly do you use?

1. ATM
2. Internet banking
3. Mobile and Agent banking
4. Others, please specify\_\_\_\_\_.

2.2 In which technological service most challenges for you ?

1. ATM

2. POS
3. Internet banking
4. Mobile and agent banking
5. Others, please specify \_\_\_\_\_.

**Part III. Questions regarding E-banking challenges and opportunities**

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

**Key ;      Strongly Disagree - 1                      Disagree - 2                      Neutral - 3**  
**Agree - 4                      Strongly agree - 5**

	<b>1. Service</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1.1	E-banking service deliver you have got exactly as promise					
1.2	Your E-banking service free from deficiencies.					
1.3	E-banking is convenient, in terms of 7 days and 24 hours services i.e. accessibility; i.e. No time limit to access bank account and information					
1.4	Is there Completing transactions through E- banking is fast and easy.					
1.5	The administrator of your E- bank responds to your needs happily and rapidly.					
1.6	Your E- bank administrator sincerely solves whatever problems you encounter.					
1.7	E- banking has knowledgeable staff to solve problem					
1.8	There is help in E- banking in any query online.					
1.9	Contacting E-bank administer is very easy.					

Please kindly state any other benefits the banks gives from the service of E-banking system?

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	<b>2. Environment</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
2.1	Using E- bank is not time consuming.					
2.2	E-banking service increase your satisfaction.					
2.3	E -banking is the cheapest way making transaction					
2.4	E- banking language is easy to understand					
2.5	There is Lack of awareness with E-banking product					
2.6	There is low levels of computer literacy.					

Please kindly state any other Challenges the banks gives from the service of E-banking system?

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	<b>3. Technology</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
3.1	Is there making transactions through E-bank is safe.					
3.2	Your E- bank protects your privacy and transaction information					
3.3	Your E- bank has clear transaction safety policies.					
3.4	There is restriction on large volume transaction					
3.5	There is fear of risk to use E-banking technology;					
3.6	Do you have trust the E-banking technology provided by banks.					
3.7	Your E- bank offers a telephone service hotline.					



3.8	Your E-bank offers a customer service email address.					
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Please kindly state any other additional opinion gives from the service of E-banking system?

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Thank you!