

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF PUBLIC ADMINISTRATION AND DEVELOPMENT MANAGEMENT

PUBLIC MANAGEMENT AND POLICY

THE EFFECT OF E-BANKING SERVICE QUALITY ON CUSTOMER SATISFACTION IN COMMERCIAL BANK OF ETHIOPIA (CBE): THE CASEOF SELECTED GRADE FOUR BRANCH CUSTOMERS

BY: KASSAHUN ASSEFA ID: GSE/2940/12

OCTOBER 2025

ADDIS ABABA, ETHIOPIA

THE EFFECT OF E-BANKING SERVICE QUALITY ON CUSTOMER SATISFACTION IN COMMERCIAL BANK OF ETHIOPIA (CBE): THE CASEOF SELECTED GRADE FOUR BRANCH CUSTOMERS

By: Kassahun Assefa

ID: GSE/2940/12

A Thesis Submitted to the Public Administration and Development Management Department in Addis Ababa University in Partial Fulfillment of the Requirements for the Degree of Masters of Arts in Public Management and Policy

Advisor:

Elias Berhanu (PhD)

October 2025

Addis Ababa, Ethiopia

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF PUBLIC ADMINISTRATION AND DEVELOPMENT MANAGEMENT

PUBLIC MANAGEMENT AND POLICY

THE EFFECT OF E-BANKING SERVICE QUALITY ON CUSTOMER SATISFACTION IN COMMERCIAL BANK OF ETHIOPIA (CBE): THE CASEOF SELECTED GRADE FOUR BRANCH CUSTOMERS

By: KASSAHUN ASSEFA

Approved By the Board of Examiners

1. _____	_____	_____
Dean, Graduate studies	**Signature**	**Date**
2. _____	_____	_____
Advisor	**Signature**	**Date**
3. _____	_____	_____
Internal Examiner	**Signature**	**Date**
4. _____	_____	_____
External Examiner	**Signature**	**Date**

ACKNOWLEDGEMENT

I want to take this chance to express my heartfelt happiness to all those who have helped and guided me throughout my thesis.

First and foremost, praises and thanks to the GOD, the Almighty, for offering the wisdom, strength, tolerance and knowledge in examining things.

I want to express my sincere appreciation to my academic advisor, Dr. Elias, for his advice and support throughout the thesis. His insightful feedback and constructive comment have been invaluable in shaping my thesis and the outcome of the research.

I would also like to thank to the customers and Digital Banking workers of all the four chosen branches of commercial bank of Ethiopia for their response to research questionnaire and interview.

Lastly, I would like to thank managers of commercial bank of Ethiopia for providing me with the source and facilities essential to conduct the research and accomplish the project.

Thank you all once again for your invaluable support and guidance.

TABLE OF CONTENTS

Page

ACKNOWLEDGEMENT i
TABLE OF CONTENTS ii
LIST OF TABLES vi
LIST OF FIGURES vii
ABBREVIATIONS AND ACRONYMS viii
ABSTRACT ix
CHAPTER ONE INTRODUCTION 1
1.1. Background of the Study 1
1.2. Statement of the Problem 3
1.3. Objectives of the study 4
1.3.1. General Objective 4
1.3.2. Specific Objectives 4
1.4. Research Questions 5
1.5. Significance of the Study 5
1.6. Scope of the Study 6
1.7. Limitations of the Study 7
1.8. Organization of the Study 7
CHAPTER TWO: REVIEW OF RELATED LITERATURE 8
Introduction 8
2.1. History of Commercial Bank of Ethiopia 8
2.2. Introduction of E-banking in Ethiopia 8
2.3. Definitions of E-banking 10
2.4. Types of E-banking 11
2.4.1. Automated Teller Machines (ATMs) 12

2.4.2. Telephone Banking 12
2.4.3. Personal Computer Banking 12
2.4.4. Internet Banking 12
2.4.5. Branch Networking 13
2.4.6. Mobile Banking 13
2.4.7. Point-of-Sale Transfer Terminals (POS) 13
2.5. Benefits of E-banking 14
2.5.1. Benefits from Bank Side 14
2.5.2. Benefits from Customers' Side 14
2.6. Challenges of E-banking 15
2.7. Dimensions of E-banking Influencing Customer Satisfaction 15
2.7.1. Ease of Use 16
2.7.2. Time of Delivery 16
2.7.3. Reliability 17
2.7.4. Privacy or Security 17
2.7.5. Service Quality 18
2.7.6. Access 20
2.8. Customer Satisfaction 21
2.9. Conceptual Framework 22
2.10. Research Hypothesis 22
CHAPTER THREE: RESEARCH METHODOLOGY 23
Introduction 23
3.1. Research Approach 23
3.2. Research Design 23
3.2.1. Population Universe 24
3.2.2. Study Population 24
3.2.3. Sample Size and Sampling Technique 24

3.3. Sources of Data 25
3.4. Research Instrument 26
3.5. Data Collection Procedures 26
3.6. Data Analysis Method 26
3.7. Model Assumptions Normality 27
3.8. Validity 28
3.9. Ethical Consideration 29
CHAPTER FOUR: DATA PRESENTATION, ANALYSIS, AND INTERPRETATION 30
4.1. Introduction 30
4.2. Demographic Characteristics of Respondents 30
4.2.1. Gender 31
4.2.2. Age 32
4.2.3. Marital Status 32
4.2.4. Educational Level 32
4.2.5. Occupations of Respondents 32
4.3. Descriptive Analysis on Organizational Cultures 33
4.3.1. Access Descriptive Analysis 34
4.3.2. Reliability Descriptive Analysis 35
4.3.3. Ease of use Descriptive Analysis 35
4.3.4. Time Delivery Descriptive Analysis 36
4.3.5. Privacy or Security Descriptive Analysis 37
4.3.6. Service Quality Descriptive Analysis 37
4.3.7. Customer Satisfaction Descriptive Analysis 38
4.4. Inferential Analysis 39
4.4.1. Correlation Analysis 39
4.4.2. Assumption test/Model Fitness Test 42
4.4.3. Regression Analysis 45

4.4.4. ANOVA (Analysis of Variance) 45
4.4.5. Regression Coefficient 46
4.5. Test of Hypotheses 48
4.6. Interpretations and Findings 49
CHAPTER FIVE 53
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS 53
Introduction 53
5.1. Summary of the Major Findings 53
5.2. Conclusions 54
5.3. Recommendations 55
5.4. Suggestions for Further Studies 56
REFERENCE 57
APPENDIX – Questionnaire 65

LIST OF TABLES

Table 1: The Summary of the Questionnaire`s Information 28

Table 2: Demographic Details of the Respondents 31

Table 3: Occupations of respondents 32

Table 4: Type of e-banking service customer used 33

Table 5: E- banking service quality dimension analysis of Access Descriptive Statistics 34

Table 6: E- banking service quality dimension analysis of Reliability Descriptive Statistics 35

Table 7: E- banking service quality dimension analysis of ease of use 35

Table 8: E- banking service quality dimension analysis of Time delivery 36

Table 9: E- banking service quality dimension analysis of Privacy 37

Table 10: Digital banking service quality dimension analysis of service quality 37

Table 11: E- banking service quality dimension analysis of customer satisfaction 38

Table 12: Employee performance and the independent factors are correlate 40

Table 13: Correlation's direction and strength 41

Table 14: Multicollinearity test with Variance Inflation Factor and Tolerance Value 44

Table 15: Independent residual assumption model 45

Table 16: ANOVA analysis 45

Table 17: Regression coefficient 46

Table 18: Model Summary with independent variables 48

Table 19: Decision of Hypothesis 48

LIST OF FIGURES

Figure 1: Structured Model Source: (Yang et al., 2004) 22

Figure 2: Testing the linearity of dependent and independent variables Source: Own survey data 2025..... 42

Figure 3: Scatter plot of homo-sedassticity Source: Own Survey, 2025..... 43

ABBREVIATIONS AND ACRONYMS

ANOVA	Analysis of Variance
ATM	Automated Teller Machine
CBE	Commercial Bank of Ethiopia
IT	Information Technology
OCC	Office of the Controller of the Currency
PC	Personal Computer
PDA	Personal Digital Assistant
PIN	Personal Identification Number
POS	Point of Sale
SMS	Short Messaging System
SPSS	Statistics Package for Social Science
TVET	Technical Vocational and Education of Training
US	United State
VIF	Variance Inflation Factor
WAN	Wide Area Network

ABSTRACT

The objective of this study is to assess the effect of electronic banking service quality on customer satisfaction mainly focused on major types of Electronic banking service delivered to customers in selected branches of Commercial Bank of Ethiopia in Yeka Addis Ababa District.

All selected branches are grade 4 branches. Grade 4 branches at the Commercial Bank of Ethiopia (CBE) are high-level, high-volume branches (e.g., Jimma Main) characterized by extensive staff hierarchies, including specialized business and quality managers. These, along with other high-grade branches, are strategically located in major cities like Addis Ababa to manage substantial, high-transaction customer bases. Based on the general objective, the study has also established five specific objectives and explored each in depth. .

This study was an explanatory study of the purpose and/or study design. Qualitative and quantitative research approaches were used. The sample size consists of 120 CBE customers. I collected information using structured surveys. The researchers developed a questionnaire in two sections. Inference and descriptive data analysis techniques were used.

From the analysis of the collected data, the findings showed that fund transfer, cash withdrawal, bill payment, buying goods, and service are the major service alternatives available to the customer once they have started to use digital banking. In addition, it is also assured in the study that the bank provides e- banking service to its customers using alternative channels of ATM, mobile banking, internet banking, CBE birr and point of sales.

According to the respondents: minimum costs, comfort and time saving, better cash management, faster way of undertaking banking transactions are some of the benefits they obtain utilizing digital banking. Moreover they have positive attitude for the service of electronic banking delivered by the bank. According to sampled customer and key informants, absence of suitable legal and regulatory framework, infrastructure, security issue, and service design with respect to local languages alternative and unable to print receipt of online transactions are among the major challenges of digital- banking service delivered by CBE in the study area.

According to the findings; invest in advance technology, create awareness of e banking among users, enhancing the service accessibility, prepare training for all staffs who have direct relation with the customers and formulating policy and procedures for dealing with transaction error , fraud and system malfunction are recommendations

Key words; E- Banking, ATM, POS, Internet and Mobile banking

CHAPTER ONE INTRODUCTION

1.1. Background of the Study

E-banking, or electronic banking, is performing banking transactions digitally via the internet or mobile apps, instead of visiting a physical bank, allowing you to manage accounts, transfer funds, pay bills, and check balances anytime, anywhere, using computers or smartphones for convenience and efficiency. It encompasses services like online banking, mobile banking, ATMs, and electronic fund transfers (EFTs).

Although financial institutions took steps to implement digital banking services in the mid-1990s, many consumers were still reluctant to conduct financial transactions online. E-commerce has gained popularity based on pioneering companies such as AOL, Amazon.com and eBay, and the concept of paying for products over the internet has become widespread (Delvin, 1995). According to Delvin (1995), by 2000, 80% of US banks were offering digital banking services. Consumer spending is slowly increasing. For instance, In 2000, Bank of America became the first bank to have more than 3 million online banking customers, accounting for more than 20% of its customers. By comparison, large national banks such as Citigroup claim to have 2.2 million online relationships worldwide, while JPMorgan Chase estimates it has more than 750,000 online banking customers (Delvin, 1995).

Other researchers like Malak have also argued that the electronic banking revolution dates back to the 1970s, when the computerization of financial institutions gained momentum (Malak, 2007); this has been proven to customers since the introduction of the Automated Teller Machine in the 1980s.

Since the banking sector and its environment are quite complex and competitive in the 21st century, information and communication technology needs form on the basis of the banking sector (Stevens, 2002).

Electronic banking in Ethiopia began around 2001 with the Commercial Bank of Ethiopia (CBE) introducing ATMs, followed by Dashen Bank becoming the sole player in card-based payments by 2006. The sector has evolved from basic ATM services to widespread mobile money, agent banking, and digital platforms like CBE Connect, heavily supported by regulatory restructuring via

the National Bank of Ethiopia (NBE). The industry is currently driven by a National Digital Payment Strategy (2021-2025) aimed at strengthening financial inclusion and enhancing digital infrastructure.

Key Historical & Developmental Aspects

Initial Phase (2001-2008): ATM services were introduced, but adoption was slow, with Dashen Bank pioneering in card-based systems.

Regulatory Support: The NBE Proclamation No. 591/2008 provided a framework for expanding electronic payment instruments.

Technological Advancements: Transition from manual, paper-based systems to card technology, and subsequently to mobile-based banking (e.g., CBE Birr, Amole, Hello Cash).

Modernization & Interoperability: Development of a national switch for inter-bank connectivity, allowing interoperability between various payment channels.

Recent Trends: Focus on digital platforms such as CBE Connect for global-local integration, alongside increasing digital literacy and efforts to address network infrastructure challenges.

Current State: Rapid growth in the number of banks and digital transactions, with over 30 banks operating in the country by 2022.

Digital marketing is essential for companies to transform in areas such as delivering products and services to customers. Therefore, it is considered an exciting and powerful tool for banks to create, grow, stimulate innovation and increase competitiveness (Gupta, 2008; Kamel, 2005).

According to Chang (2003), digital banking has brought benefits to the banking industry such as automatic teller machines (ATMs), mobile banking, telephone banking, computer banking and now online banking. In addition, thanks to internet banking, the processes of transferring money, viewing and checking savings balances, paying mortgages, paying bills, purchasing financial instruments and certificates of deposit can be improved (Chang, 2003). This means that the digital economy increases delivery efficiency in the banking sector because customers can do business from one end of the country to another, from near and far.

Other researchers such as Gonzalez, Maholtra and Singh believe that the digital economy is changing the practices of traditional banks and this is creating a revolution in the economy, which in turn creates a positive impact on banking in the economy.

The purpose of this study is investigating the assessment on electronic banking service quality in commercial bank of Ethiopia because The Commercial Bank of Ethiopia (CBE) is the largest and oldest state-owned bank in Ethiopia, dominating the market with over half of the sector's assets, loans, and deposits, controlling roughly 56% of banking assets and 54% of deposit mobilization.

1.2. Statement of the Problem

In the past, the customer's need for banking services was mainly driven by the security of money and interest earned on savings. But today, customers' needs have changed, from financial security to the way banks provide services. This is because today's customers want good, fast and easy service (Kwashie, 2012).

Ethiopian financial sectors have recently started to implement digital banking services with the launch of digital banking services. The business is characterized by intense competition to attract more customers. This technological development makes the banking process faster and easier while meeting customer needs. However, the quality of some products and services offered by digital marketing companies do not meet the needs of consumers.

Various factors affect the quality of service delivery in banking industry. For instance the study by Philipos (2013), found that lack of cash in ATM machines, failure to print banknotes, card blocking, irregular ATM service, lack of ATM service, and lack of sufficient personnel to deal with ATM machine errors in all banks. Lack of a reasonable alternative for customers to replace ATM services in case of temporary problems with the machines, Lack of mobile banking service, lack of reliable Tele banking, Lack of credit card service, Immaturity of technological infrastructure, low level of awareness creation and creativity, interruption of network, failure to equally distribute digital banking service throughout the country have been evaluated during the survey.

Previous researches revealed that customer satisfaction in electronic banking is related to the ease of doing business, reasonable and fair price (payment), efficiency, confidentiality, security,

reliability of electronic banking services and the performance of employees in solving electronic problems Their focus is mainly on impact of digital- banking services that satisfy customers. They focused more on ATM and mobile digital banking services but ignore other e-banking services such as POS and internet banking services. In addition they did not give attention to the level of customer satisfaction achieved by using digital banking services.

In addition other research focus on more on traditional banking services and ignores the service quality of digital-banking for customers.

However, all suggested future researchers to investigate the impact of e-banking service quality on customer satisfaction, customer loyalty and customer retention

Although there are few studies focusing on the challenges and opportunities of adopting e-banking; they have not yet evaluated the assessment on e- banking service quality in commercial bank of Ethiopia. The study tries to answer the above question, and the research result on―assessment of e-Banking Service Quality in commercial bank of Ethiopia", which is recommended by previous researchers in future research. The aim of this study is to understand people's desire for digital banking services and the contribution of e- banking companies as defined by other researchers in attracting consumer interest in digital marketing, this seems to be in the field of research and the researcher thinks that it has not been done. The researcher believes that conducting this research provides information on the current status of the bank in delivering e- banking service quality to its customers. Therefore, this study aims to fill the gap in research by conducting an empirical study on the quality of digital banking services in commercial banks of Ethiopia.

1.3. Objectives of the study

1.3.1. General Objective

The general objective of the study is to assess the effect of e-banking service quality on customer satisfaction in commercial bank of Ethiopia

1.3.2. Specific Objectives

1. To identify access, ease of use, time of delivery ,security, service quality and reliability affect customer satisfaction

2. To know customer understanding about E- banking service in selected branch under Yeka Addis Ababa district.
3. To identify benefits which customer obtains from using electronic banking service in selected branch under Yeka Addis Ababa district.
4. To assess E- banking service design meets with customer expectation in chosen branch under Yeka Addis Ababa district.
5. To find ATM, Mobile and Internet banking and CBE Birr related challenges of customers in selected branch under Yeka Addis Ababa district.

1.4. Research Questions

1. How do access, ease of use, time of delivery, security, service quality and reliability affect customer satisfaction?
2. Do customers have awareness of operating electronic banking?
3. What benefits do customers obtain from using e- banking services delivered by Commercial Bank of Ethiopia?
4. How CBE's electronic banking service design fit customer need?
5. What are ATM, Mobile and Internet banking and CBE birr related challenges of the customer in CBE?

1.5. Significance of the Study

First, this study will help CBE analyze the public perception of digital banking services provided by Ethiopian banks. Customer satisfaction is a primary factor for banks and this research will provide information for improving banking services.

Additionally, the service quality evaluation study will enable CBE to determine its performance based on customer evaluation. This study is expected to provide needed recommendations to business enterprises, regulators and consumer protection agencies in Ethiopia to improve their decision-making and ensure that customers or the public in the company receive the best service.

This research also has important implications for consumers and marketers in general. The findings will provide information to commercial banks to improve the performance of their services and customer orientation towards customer satisfaction and comfort.

Finally, the study will add to literature for the future researchers who are doing in the area of marketing, customer satisfaction and quality service delivery in the banking industry.

1.6. Scope of the Study

The study focuses on two main areas of this study. This includes the content and scope of the study. In summary, the study focuses on electronic banking and its potential impact on the quality of digital banking services. According to many researchers, there are many types of electronic banking; these include automatic teller machines (ATM), internet banking, mobile banking, CBE birr, debit cards, electronic switchboard telephone banking, SMS banking, home banking, point banking and internet banking just banking to give a few examples.

Recently E-banking services available in Ethiopia suggest some digital banking services like ATM, mobile banking, internet banking, debit card, western union, telegram banking and point of sale (POS) services and more. However, Automatic teller machines (ATM), internet banking, mobile banking, point of sale were chosen as targets because these services are only making progress in Ethiopia. In this process, all available e-banking services will be identified and evaluated how they are effective in satisfying customers.

After the observational survey, ATM services, mobile banking, CBE birr and internet banking could be selected. Since most of the people banking in Ethiopia use these digital banking services, the researcher selected only four of them. There are more than 25 banks in Ethiopia, but some of them provide digital banking services to Ethiopian customers; therefore, this study will be limited to a selected bank in Ethiopia, Ethiopian Commercial Bank. It is the first bank in Ethiopia to use digital banking services and its branches are located all over the country. This is the reason why the researcher wants to conduct this study.

Similarly, the area of this study is Addis Ababa city. However, there are many CBE branches in Addis Ababa city, making it difficult for researchers to examine all the customers of these branches. The expansion therefore includes five branches of CBE, four popular electronic banks (ATM, MOB, CBE birr and IB). Among these, Tefera Degife branch, Ayat branch, Kara Adebabay,Selassie branch and Kotebe branch constitute the areas of this study. Because as compared to other branches a lot of customers visit these branches to get services.

1.7. Limitations of the Study

The main limitation of this study was the researcher had not plenty of time due to his job assignment. He was busy in his work place. In addition, most respondents were not interested in filling out the survey. The final limitation of this study is that some respondents have little or none of them through the e-banking services or the mechanisms of such services. These three limitations affected the way the research has conducted the study. To overcome these expected problems, the researcher told the purpose of the study and gives them confidentiality on the collected information by assuring them the data will be used only for academic purpose and creates a friendly environment. Moreover he requested annual leave to conduct the study and to solve the limitation. Concerning awareness of electronic banking system the researcher selected respondents intentionally who have experience using e banking.

1.8. Organization of the Study

This study is divided into five sections. Chapter 1 explains the background of the research, statement of the problem, research purpose, significance of the research, and organization of the research.

Chapter 2 introduces business research (economic research) at home and abroad on digital banking and digital banking services, as well as the theoretical background of digital banking related to the identified problem.

Chapter 3 describes the data types and sources used in this study, research methods, research design, collection methods, sampling methods used to determine sample size, statistical data analysis tools, and collection methods.

Chapter 4 presents the research findings and Chapter 5 presents conclusions using descriptive and inferential statistical tools. The last section also includes the summary, results, limitations and recommendations of this study.

CHAPTER TWO: REVIEW OF RELATED LITERATURE

Introduction

This chapter presents a review of previous studies related to the present study. The chapter constitutes examination of studies related to digital-banking and customer satisfaction in the service industry especially in banks. It also examines the dimensions of digital-banking affecting customer satisfaction in the banking industry. The chapter also, outlines the digital banking services available in the Commercial Bank of Ethiopia and its history.

2.1. History of Commercial Bank of Ethiopia

Commercial Bank of Ethiopia is a state financial institution established in 1942 and today the bank has a large number of employees, capital base, etc. compared to other banks in Ethiopia. It has become Ethiopia's leading bank by offering modern business such as. It has more than 1950 branches across the country and employs and promises more than 35,000 skilled workers. As of 30 June 2021, the bank had more than 40 million depositors and assets of 1.1 trillion birr, making it the leading bank in Africa. Ethiopian Commercial Bank plays a catalytic role in the economic progress and development of the country.

It has established relationships with more than 50 foreign banks, including Commerzbank, Royal Bank of Canada, Citibank and HSC BC.

Commercial Bank of Ethiopia has fast partnerships with more than 700 banks worldwide and therefore has strong affiliations and relationships with reputable banks around the world. CBE was a pioneer in launching Western Union remittance services in Ethiopia in the early 1990s and currently operates such companies as Money Gram, Atlantic International (BOLE), Xpress Money, etc. It cooperates with 20 other remittance providers such as. (Bank Profile)

2.2. Introduction of E-banking in Ethiopia

Electronic banking services emerged in Ethiopia in late 2001; therefore, Ethiopia's largest state-owned bank (CBE) has implemented electronic banking services such as ATMs to provide services to local users. CBE has had a Visa membership since November 14, 2005 and has eight ATMs in

Addis Ababa. However, he could not benefit from membership because the necessary procedures were not implemented. Although CBE is a leader in introducing ATM-based payment systems and has gained Visa membership, it still lags behind Dashen Bank, which is actively working to maintain its core position in electronic money payments. Dashen Bank has been the sole player in the electronic banking field since 2006, and CBE continues to rapidly develop card payment solutions. (Gadachu, 2010)

Dashen Bank is a pioneer in introducing electronic banking services in Ethiopia and has installed ATM machines at convenient locations for cardholders' use. Dashen's ATMs serve global debit card and Visa holders in China 24 hours a day, 7 days a week, 365 days a year. As of June 2009, Dashen Bank has installed more than 40 ATM machines in branches, universities, shops, restaurants and hotels. In 2011, the payment card industry developed greatly and Dashen ATM services were expanded to 70 and 704 POS terminals (bank's 2011 report). Services that Dashen Bank ATMs can provide include cash withdrawal, balance inquiry, small statement, member card account transfer, personal password change, etc. is located. The bank currently only provides debit card service for Visa cards. Dashen bank customers can withdraw up to 5,000 birr in cash per day and purchase goods and services worth up to 8,000 to 13,000 birr.

To maintain its leadership, Dashen Bank started accepting MasterCard as well as Visa. Dashen Bank acquired MasterCard as a member in 2008. Confident in its leadership position in the technology industry, Dashen Bank signed an agreement with South African electrical engineering technology company iVery on April 21, 2009 to create a mobile business.

Under the agreement, iVery Payment Technologies licensed its Gateway and MiCard electronic payment solutions to Dashen Bank. Dashen Modbirr users can transfer 500 birr to other Modbirr users within 24 hours a day. This will make Dashan Bank the first private bank in Ethiopia to adopt e-commerce and mobile banking (Amanyehun, 2011).

While Dashen's new technology takes a step forward in depositing money from one account to another, the first electronic banking gateway has been signed at Dashen Bank and CBE with the Ethiopian Exchange Sale (ECX). The e-banking system, developed jointly with two banks, aims to facilitate business life and provide secure electronic information sharing meetings between customers, banks and ECX (Abiy 2008). In 2008, an Agreement was signed between Wegagen Bank

and Technology Associates (TA), a Kenyan information technology (IT) company to develop solutions to the payment problem and establish the ATM network on 30 December 2008.

Zemen Bank is the only bank in Ethiopia that follows the single trade concept and started online trading in 2010, a new service in the Ethiopian financial market. The bank tested the business from the first stage of the online business. The official version of the program is now available and customers can switch online for free. Previously, online banking services offered by banks could only access bank statements and exchange rate information. New, untested services proposed by the bank include free money transfers, business payment transfers where employers can post salaries into the system and employees can pay personal accounts online, and online utility bills if utilities companies are available. Is ready (Asrat, 2010). In February 2009, three private companies signed an agreement to establish a network of ATMs and POS terminals as part of Ethiopia's strategy to develop electronic payment cards.

Three major private banks, Awash International Bank SC., Nib International Bank SC. and United Bank SC. agreed in principle to create an ATM network called Fettan ATM Network. If all goes as planned, ATM Express will have more than 140 ATMs and 340 POS locations across Ethiopia. All branches of banks, all domestic airports, shops and workplaces served by unions will be equipped with an ATM machine. This agreement is the first major collaboration between rival banks in Ethiopia and should encourage other banks to follow suit as no other bank in Ethiopia is able to provide the overall and accessible service (Binyam, 2009).

2.3. Definitions of E-banking

Different scholars have defined the concept of electronic commerce in different ways. Daniel (1999) defines electronic banking as banks that offer banking information and services to customers through different distribution channels that can use computers with browsers or desktop software and different devices such as mobile phones, telephones or digital TV.

Pikkarainen et al. (2004) also defined e-banking as "an online platform where customers can access a variety of banking services, from payments to investments". In fact, in the context of globalization and intense competition, the banking sector, which is an opportunity for financial institutions to expand, has become a good tool rather than a way to understand the importance of competition (Flavian et al., 2004; Gan) and Klems, 2006).

Timothy (2012) also states that electronic banking refers to the use of the internet as a remote control tool such as opening bank accounts, transferring money between different currencies, electronic notifications and payments. This can be given in two main ways. A bank that has the physical capacity to establish a website and offer this service to its customers despite traditional distribution channels. The second is to establish a virtual bank and place a PC server in the office, which is the official location of the bank. Banks offer their customers the opportunity to deposit and withdraw money from ATMs (automatic teller machines) or other electronic terminals as requested by various sources and charge administrative fees for this. E-banking is a modern delivery method for banking services (Ahasanul, 2009).

2.4. Types of E-banking

In this case, different researchers have made different opinions or analyses. For example, Salehi and Zila (2008) stated that e-banking consists of electronic communication between banks and customers for the purpose of planning, managing and managing customers' financial transactions through the bank. This type of work appears to be driven by:

- Internet banking (or online banking),
- Telephone banking,
- TV-based banking, and
- Mobile phone banking (or offline banking)
- CBE birr

According to Gan and Clemes (2006), electronic banking is also defined as the various platforms through which customers can access them, such as internet banking or (online banking), TV banking, mobile banking and PC (personal computer) banking (or offline banking). Services that use smart electronic devices such as PCs, personal digital assistants (PDAs), automated teller machines (ATMs), point of sale (POS), self-service terminals or touch-tone phones.

There are many types of electronic commerce suggested by many researchers; These will be mentioned below.

2.4.1. Automated Teller Machines (ATMs)

According to Rose's (1999) definition in Prince, "The ATM combines the computer terminal, database system, and cash bank into a single unit, allowing customers to view access to the bank's storage system using a PIN or plastic card computer 24 hours a day." Important advice or information is given to customers using electronic banking by entering a special code into the computer terminal connected to the bank information kept in the environment.

Therefore, it has accelerated due to developing technology. The ATM machine has reached the point where balance and fee payments are made. Banks use these electronic banking equipment using it to get good results.).

2.4.2. Telephone Banking

Phone banking can be defined as a form of remote or virtual banking that provides financial services primarily through communication devices. Bank customers can carry out their banking transactions by calling or calling using voice response (AVR) technology. Linked to the bank's automated system (Balachandher et al., 2001). As Leow (1999) points out, telemarketing also has many benefits for consumers and banks. It provides convenience, accessibility and saves users time. For banks, the cost of telephone services is lower than the cost of branch services. Customers can receive banking services in different offices and homes without going to bank branches. It has almost all the benefits of an ATM machine, but lacks the productivity that comes with withdrawing money from an ATM

2.4.3. Personal Computer Banking

According to Abor (2005), PC banking is a service that allows bank customers to access their bank information through the constraints of the software installed on their computers. Customers can log in and perform various banking services. The importance of PC knowledge has led to the widespread use of PCs. This played a major role in supporting the development of PC Bank. Customers can access banking services even from their homes and offices (Abor, 2005).

2.4.4. Internet Banking

According to Essinger (1999), internet banking is: "The strict control of allowing customers to access their bank accounts over the web and perform certain transactions on their accounts".

According to the Internet Banking Guide (2001) of the Office of the Comptroller of the Currency (OCC) of the Federal Reserve Board of Chicago, Internet banking is defined as "the provision of traditional (banking) services over the Internet." Online banking offers customers convenient and flexible services. It allows customers to perform almost all online banking transactions. People can check their accounts, check banks and even send money to others through different accounts, which is the most economical and innovative method that can be provided. Another unique feature of online business is that it provides 24/7 access to customers.

2.4.5. Branch Networking

Branch coordination can use computerization and connect independent bank branches in different locations to a wide area network (WAN) framework to create and share consumer durables customer information (Abor, 2005). It eliminates time and distance effects by providing fast exchange rates. Almost all banks in Ethiopia have numerous private and public branches connected to the internet all over the country. Even if the customer opens an account, he can work from anywhere.

2.4.6. Mobile Banking

In addition to electronic banking products, mobile banking is also widely used in Ethiopia. This means getting banking services from your phone. According to Clottey (2008), mobile banking is a system or platform where customers can update the transactions of their accounts. These changes may appear as debits and credits to the account, or as charges being charged to the account. All you need for mobile banking is a mobile phone with a working messaging system. SMS banking falls into this category. The system uses a shortcut to remind customers of their money (Clottey, T.A. and Collier, DA. 2008)).

2.4.7. Point-of-Sale Transfer Terminals (POS)

It allows customers to pay using credit cards (the new name for credit cards) in stores. This card is similar to a credit card, but there is a big difference. The money for the purchase is instantly transferred from the credit card holder to the store (Malak, 2007).

This electronic banking system manages checking, loan authorization, cash deposits and withdrawals, and cash payments. Increases the energy efficiency of sales. Therefore, the cost of a purchase from a store such as a gas station or supermarket will be immediately deducted from the

customer's account. This means that customers can pay for goods and services without having to physically touch cash, as the purchase price will be deducted from the buyer's card and transferred to the seller's account (Olanipekun et al., 2013).

2.5. Benefits of E-banking

It provides a lot of benefits both to the customer and the bank itself.

2.5.1. Benefits from Bank Side

First, the benefits of electronic banking services to banks are competitive products and a better understanding of business needs. Therefore, banks that offer electronic banking services are considered leaders in technology and advancement. Therefore, they will bring a better image to their customers. Other rewards can be measured in monetary terms.

The main goal of every organization is to make the most profit and banks are no exception. As Mols (1999) states, the internet is a revolution that will eliminate old rules that have a great impact. Online banking transactions are cheaper than bank transactions and even phone transactions.

Other benefits provided by electronic commerce allow banks to have low costs, efficient financial services and also benefit from advertising for sales such as credit cards and loans (Hawkins, 2001).

Karjaluoto (2002) also stated that online banking can help banks save costs, reach new customers, increase efficiency, enhance the bank's reputation, and provide better customer service and satisfaction. Institutions (e.g. banks) and consumers.

2.5.2. Benefits from Customers' Side

According to Jen and Cheng (2006), electronic banking has played an important role for banks and businesses around the world and it is the way they do business. Electronic banking users can check their accounts, transfer money and access a variety of banking products and services. Customers do not need to visit bank branches to conduct business (Cheng et al., 2006). E-banking plays an important role in business by helping buyers and sellers conduct financial transactions through the exchange of goods and services without the need to meet in person (Cheng, 2006). Customers can shop anywhere in the world without having to carry cash.

Howcroft et al. (2002) in a study found that an important factor influencing customers to use online banking is lower cost, followed by reduced data availability and human error, thus reducing conflict (Howcroft et al., 2000).

2.6. Challenges of E-banking

Although it has shown the way for banks, the innovation of IT applications still faces many problems such as the blinding of the business area, the collapse of modern borders, the passing of new competitors, and the creation of new projects Liao and Cheung, 2003). < br> Another security problem related to the energy sector was put forward by The Economist Magazine (1999) by dividing the insecurity of the energy sector into three categories; The first is security issues related to fraud and theft, and the second is hackers. The security issue eventually arises. Resulting from flaws in design or configuration, leading to poor security (actual users have been shown to be able to trade on other users' accounts). All of these insecurities have financial and legal credibility.

According to Earl (2000), other problems with electronic commerce include the type of technology chosen, lack of knowledge and finally usage. In this case, we learned that bank managers not only know their business, processes and employee behavior well, but also know their experiences well and share them with their customers.

2.7. Dimensions of E-banking Influencing Customer Satisfaction

In the study of e-banking, different researchers have found that different e-banking dimensions affect customer satisfaction. For example, Yang et al. (2004) reported characteristics such as reliability, accountability, reasonableness, ease of use, security, and quality of the product or business online. Cronin and Taylor (1992) also identified user interface, core services and customer service as the most important aspects of banking. Other factors that measure the quality of e-banking services are listed as follows: Website appearance, ease of use, compatibility, design and content, reliability, performance quality, work, support, communication, security, motivation, work, storage capacity, service, reliability, repair shopping policies, Reputation and empathy (Madu, C.N. and Madu, AA. 2002; Santus, 2003).

Although different researchers have found that there are different types of e-banking dimensions or factors that affect customer satisfaction, researchers have only studied e-banking dimensions namely

ease of use, delivery time, privacy or security, reliability, accessibility and service quality. service. Because in the context of a country like Ethiopia, the purpose of the six main e-banking services is very important. However, there is a preference for the tools used by banks to be reliable, safe, fast, simple, easy to use and convenient. Therefore, this research needs to be conducted to understand the needs of customers using e-banking services. Therefore, researchers have examined e-banking service quality such as ease of use, security, accessibility, reliability, delivery time and service quality.

2.7.1. Ease of Use

Davis (1986) stated that although the process does not require more effort, it can be accepted by users. In fact, Davis defines ease of use as ―the degree to which a person believes that using a service requires no effort‖ (Davis, 1989).

Dabholkar (1996) also stated that when different technologies are available, consumers will choose the technology that suits them. Later, Davis et al. (1989) and Bagozzi (1990) found that effort and stress appear to be ―easy-to-use‖ behavior of the coin. As we learned from both authors, ease of use is also important for people using computers or similar devices.

Additionally, Guriting (2006) investigated the determinants of internet spending in Malaysian Borneo. Researchers found that "perceived ease of use and perceived usefulness are important factors in determining the acceptance and use of various information technologies." Dabholkar (1996) supports that most people attach importance to ease of use, thus saving time and effort. and reduce social risk. Szymanski and Hise (2000) believe that ―convenience‖ is similar to ―ease of use‖ (Dabholkar and Bagozzi, 2002). In the author's opinion, convenience seems to be one of the main factors for interest in online banking.

2.7.2. Time of Delivery

Bateson (1985) believes that customers are more sensitive to prompt delivery when they receive service from others. Additionally, many studies show that customers want to monitor service uptime. Mols (1999) also stated that sometimes customers prefer to provide services themselves. This shows that customers want service as soon as possible or without spending too much time.

Mols (1999) also stated that slow service delivery can negatively affect the perception of overall service quality. We know that when customers are unhappy with your initial service, they will stop using the service or product, let alone improve your delivery service. In this regard, Dabholkar (1996) emphasized that people need emergency services.

Similarly, Langeard et al. (1981) discovered also that time was a significant factor for individuals in using a new service or technology. And in the same way, Ledingham (1984) discovered that time savings were essential to individuals who use electronic banking and shopping (Dabholkar, 1996).

2.7.3. Reliability

It involves two elements: trust and similar work. Reliability also refers to commitment to cost, preservation of accurate information, and delivery of the service within an acceptable time (Saha and Zhao, 2005). It also ―expresses the real performance of self-service technology and the authenticity of the service‖ (Weijters et al., 2005). Many authors have found that trust is an important factor in determining service quality (Bagozzi, 1990; Davis et al., 1992; Parasuraman et al., 1988; Zeithaml and Bitner, 2000).

Additionally, Cronin and Taylor (1992) reported that reliability is the most important factor when customers evaluate service quality. Zeithaml and Bitner (2000) argue that consumers should be particularly impressed by the reliability of new technologies because they may be associated with risks such as failure. Parasuraman et al. (1988) also believe that service reliability is an important factor in service quality. Learning how to use computers or technology with similar features is also important because it can affect performance (or confidence) (Davis et al., 1989; Bagozzi, 1990; Davis et al., 1992).

Finally, Dabholkar (1996) stated in his study that reliability and validity are necessary criteria in the evaluation of technology-related services. This shows that without trust, customers will not use it and do good things. Therefore, based on data analysis, we can conclude that trust has a positive impact on customers' willingness to use electronic banking services.

2.7.4. Privacy or Security

This is important to guarantee that e-banking users have financial information, that is, information regarding the security of banking transactions and non-reporting of financial statements (Yang and

Fang, 2004).

Madu (2002) pointed out that another benefit of consumers who decide to spend money online is security. So when a particular bank provides services, it does not do a good job of protecting the customer's privacy; Customers should not use this at all. Research by Pavlou (2003) shows that both bankers and customers stay away from electronic banking due to security concerns. Polatoğlu and Ekin (2001) also pointed out that the main reason for the slow growth of internet expenditures is financial, physical and social risks. Clottey and Collier (2008) also found in their research that although most people are aware of the security risks of online commerce, their knowledge and understanding of the security of online commerce is very poor. The findings also show that people know their bank will protect them and therefore they trust their bank, but they lack confidence in using financial tools online. Oliver (1981) pointed out in his research results that security problems are the main factors that deter users from using the Internet for financial transactions. This study concluded that consumers do not see the benefits of using the Internet for business purposes and that educational programs are necessary to complement new Internet products (Oliver, 1981). Finally, Churchill (1982) stated that one of the most important problems that individuals or bank customers will face in the future is the fear of higher risks associated with using the Internet for commercial and financial transactions.

2.7.5. Service Quality

Research on ―quality‖ in products existed long before the inception of services (Gummesson, 1998). However, in the product market, the concept of quality is not sufficient to be applied to services due to the differences between the two terms (Parasuraman, Zeithaml, & Berry, 1985). Parasuraman, Zeithaml, and Berry (1985, p. 42) argue that service quality is ―performance-oriented‖ rather than product-oriented, and therefore ―specific product quality is rarely determined.‖ Clottey and Collier (2008) also noted that the meaning of the term good varies among authors, depending mainly on the person interpreting it, the measure used, and the context in which it is defined. Service quality is an important issue in service management and marketing (Clottey and Collier, 2008).

Although banking is seen as a service that includes all the characteristics of a service, the literature in the 1980s and 1990s examines service quality from two perspectives. Researchers such as Carman (1990), Garvin (1983), Parasuraman et al. (1985, 1988) defines and measures service quality by

monitoring service quality based on Bitner and Hubbert (1994), Iacobucci, Grayson, and Ostrom (1994), Oliver (1993), and Parasuraman, Zeithaml, and Berry (1994).) Contributions On the contrary, he examined service practices to establish a relationship between service quality and customer satisfaction. Donnelly et al. (1995) also define service quality as the performance or best performance of the organization's products and argue that this is affected by our service quality.

Our dimensions are customer service, customer service experience, and service and technology support. Like customer satisfaction, service quality is a difficult and uncertain concept to measure (Carman 1990). Parasuraman et al. (1985) also suggested that service quality goes beyond profit and affects delivery. According to the existing literature, there are some similarities, although not the same, between service quality and customer satisfaction (Cronin and Taylor, 1992; Parasuraman et al., 1985). According to Clemes et al., this leads to the integration of service quality and customer satisfaction information as the basis of service quality (Clemes et al., 2007).

Service quality in electronic banking, crucial for customer satisfaction and loyalty, is primarily measured through dimensions like reliability, security, responsiveness, efficiency, and system availability. High-quality, secure, and user-friendly digital banking platforms significantly enhance user experience and retention, while issues like service interruptions and poor security diminish trust and satisfaction.

Key Dimensions of E-Banking Service Quality

Reliability: The ability to perform the promised service dependably, accurately, and consistently (e.g., system uptime, correct transactions).

Security/Trust: Ensuring user safety, privacy, and protection against fraud, which is paramount for digital trust.

Efficiency/Convenience: The ease of navigating the website or app and the speed of completing transactions.

Responsiveness: The willingness to help customers and provide prompt service, including rapid resolution of technical issues.

System Availability: The accessibility of the service 24/7 without frequent interruptions or downtime.

Site Aesthetics/Design: The visual appeal and user-friendliness of the interface.

Impact on Customer Satisfaction

Positive Correlation: Research consistently shows that high-quality, reliable, and secure e-banking services directly lead to increased customer satisfaction and loyalty.

Dimensions Driving Satisfaction: Reliability, privacy, and efficiency are often cited as the most critical factors.

Impact of Poor Quality: Frequent service interruptions, slow systems, and, most importantly, security concerns can severely diminish user satisfaction and trust.

Challenges and Improvements

Technical Issues: System downtime and slow connectivity are major challenges.

Security Concerns: As digital transactions increase, ensuring high-level security to prevent fraud is critical.

User Experience (UX): Banks need to continuously improve the interface to be user-friendly, particularly for less tech-savvy users.

Infrastructure Requirements: Reliable telecommunications and power infrastructure are necessary for optimal service delivery.

Measurement Models

SERVQUAL/E-SERVQUAL: Researchers often adapt the traditional SERVQUAL model (tangibles, reliability, responsiveness, assurance, empathy) or use the specialized E-SERVQUAL model to measure service quality in the digital context.

2.7.6. Access

According to Timothy (2012), this includes the ability to service an ATM, access a phone, access an email, and access a foreign bank account. It includes easy access and relative convenience (Timothy T. 2012).

Research in the USA shows that the main motivation for online business is the time savings and 24/7 access it can provide (Pew, 2003). Additionally, e-banking adoption is associated with high Internet

activity (Durkin, 2004). The access of Internet users who prefer it has increased.

Internet banking also allows customers to directly access their financial information and carry out their financial transactions more easily (Rotchanakitumnuai and Speece, 2003). The banking industry now takes advantage of new communication technology (Internet) to provide easy, convenient and flexible services to customers (Haque, 2009).

2.8. Customer Satisfaction

Although many articles have been written about customer satisfaction, there is no specific or universal definition in the theoretical literature. Jamal (2004) stated that satisfaction has been considered one of the most important theoretical and practical concepts for most businessmen in business life for the last four years.

Broadly speaking, there are two different theories of customer satisfaction: satisfaction and pressure to change (Olsen and Johnson, 2003). Increasing satisfaction means that customer satisfaction is based not only on the current market but also on the customer's evaluation of the entire purchasing experience (Johnson, M. D. and Fornell, C. 1991). Exchange satisfaction refers to customer satisfaction with products measured based on past experiences (Oliver 1997). Today, most people use interest in learning to use interest (Gupta, S. & Zeithaml, V. (2006)).

Greater satisfaction has a greater impact on bank performance and services and is a necessary indicator of customer purchases (Parasurman et al., 1998). Considering these two perspectives, customer satisfaction can be defined in different ways.

In case studies, customer satisfaction is defined as a function of the difference between past experience and current delivery (Churchill, G.A.J. and Surprenant, C 1982). Jamal and Nasser (2003) define customer satisfaction as the customer's feeling or behavior after using a service or product. Customer satisfaction can be defined as the evaluation of products or services according to customer needs and perceptions (Oliver 1980). Therefore, customer satisfaction is the customer's feeling that their expectations have been met after using the product, and this affects their future behavior (Adamson et al., 2003).

2.9. Conceptual Framework

The basic objective of this study is to assess digital banking service quality in CBE that affects customer satisfaction. The research model for this research is given in Figure 1. The independent variables will be taken into account in the explanation of digital-banking service are the six identified characteristics.

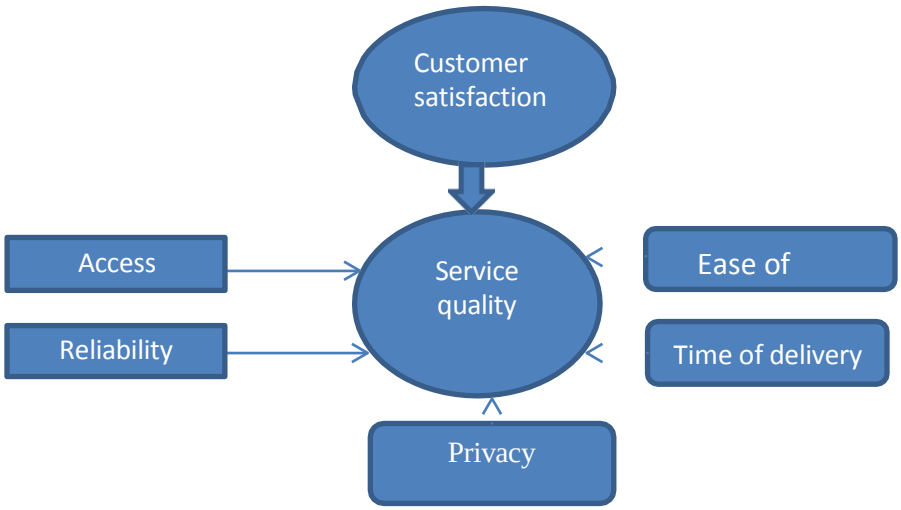


Figure 1: Structured Model Source: (Yang et al., 2004)

From the above conceptual model can estimated one multiple regression. The model that ispresented below:

Satisfaction = βo+β1access+β2reliability+β3ease of use+β4privacy or security+β5service quality+β6time of delivery

2.10. Research Hypothesis

The alternatives hypotheses were:

- Ha1: E- banking service quality does influence customer satisfaction
- Ha2: Access does impact on customer satisfaction
- Ha3 Ease of use does impact on customer satisfaction
- Ha4 Reliability does impact on customer satisfaction
- Ha5 Privacy/security does impact on customer satisfaction
- Ha6 Time of delivery does impact on customer satisfaction

CHAPTER THREE: RESEARCH METHODOLOGY

Introduction

The main objective of this study is to assess the effect of electronic banking service quality on customer satisfaction in commercial bank of Ethiopia. The research was focused on the respondents who are using at Yeka district only because other branches and regions are excluded due to inaccessibility of resources, difficulty in geographic allocation and time constraint.

3.1. Research Approach

There are three basic approaches to research. These are qualitative, quantitative and mixed. The quantitative research approach uses statistics and numbers that are primarily displayed in numbers, while the qualitative approach is based on word-based descriptions of events. According to Yin (1994), the selected research approach should be carried out according to the research questions of this particular situation regarding modern or historical events.

In conducting this study, I used both quantitative and qualitative research approaches even though the quantitative research approach of the study is more useful for my study. Because a quantitative research design is a formal and systemic process used to obtain information using numerical data (Creswell, J.W. 2003).

3.2. Research Design

Mouton (2001) says that research design is like a plan or map that someone creates before starting a research project. It shows how the researcher will go about doing the research.

Sekaran (2003) mentions that after figuring out the variables in the conceptual framework, the next step is to design the research in a way that makes it possible to collect and look at the data.

Malholtra (2004) explains that research design is like a structure or outline for carrying out a research project. It gives clear steps on how to get the information needed to understand and solve the research problem.

This study used an explanatory research design.This type of design helps find out how

independent and dependent variables are connected. It is also used to gather information about the current state of a situation. That's why explanatory survey studies were chosen for this research. They help study a large group of people and understand what they think and do. The purpose of using this design is to help the researcher learn more about the characteristics of the variables (Creswell, J.W. 2003).

3.2.1. Population Universe

The universal population of this study included all clients from various banks that used digital banking in Ethiopia. In other words, this study is interested in assessing the quality of all clients of Ethiopian financial institutions.

3.2.2. Study Population

As Ethiopian financial institutions are quite large, researchers should not have looked into all clients of the institution. For these reasons, CBE customers from 5 selected branches are a target population. The reason why researchers from these branches chose them is because they have a higher ability to serve a large number of customers and performance ratings than other branches of Addis Ababa. This implied that the study focused on selected branches and clients of Ethiopian Commercial Banks across the country.

3.2.3. Sample Size and Sampling Technique

The sampling selection technique for this study has been the non-probability sampling. Non probability sampling can be defined as a sample method where some elements of the population have no chance of selection, or where the probability of selection cannot be accurately determined. According to Twumasi (2002) As the name suggests, researchers who adhere to research goals select respondents who can answer research questions. With appropriate calculations and related research strategies, he selects the respondents he would like to include in the sample. The sampling for convenience is the sampling of a sample without probability, where test subjects are selected for their comfortable accessibility and proximity to the researcher (Black et al., 1999). In the end, researchers were used by untrue sampling, targeted (convenience) stitching technology types. First, we observed that all people visiting the branches were not necessarily customers of the bank. They came to branches for many purposes some came there with their friends without objective. In

addition, some customers were sent to delete a check or submitted for cash or other purposes.

Second, the researcher read other related journals that previously used this type of stab testing technique. For example, Prince Adiyia Kwareng (2015), Martin Otu Offi, and Kwaku Nuamah-Gyambrah (2016) were used to use targeted sampling technologies. Therefore, researchers may aim to purposefully select participants who are active customers of selected bank branches. Therefore, there is a sample size for this study with 120 customers of five branches with intentionally selected customers of the population universe. Why do researchers receive samples of 120 customers?

Because even if electronic banking is run by people, employees don't directly serve customers. Rather, customers receive digital banking services directly from computers or/and Internet systems.

For the time being, if the machine does not function properly, the customer may not receive money through ATMs and POS. This makes the customer unhappy. The same applies to your internet connection if the customer causes dissatisfaction and the customer needs service. Therefore, inappropriate work and system errors have affected the satisfaction of all customers of digital banking services and their quality of service. Therefore, it did not affect the study of all customers or 120 samples, as the response was the same for the use of digital banking services. 120 customers can represent all clients in digital banking services.

The system is not customer biased. Therefore, the sample size means that 24 customers were conveniently selected from five branches of five classes..

3.3. Sources of Data

Primary Data and their sources:

The main source of data for this study was digital banking customers at selected branches. The required data received through sampling on the structured questionnaire.

Secondary Data and their sources:

Secondary data used to support the study received results from other researchers in the region (empirical studies). Sources of secondary data are libraries, magazines, and newspapers for business magazines and business magazines. Related concepts in research, such as similar definitions of

digital banks, history of digital banks, benefits of digital banks, and the relationship between digital banks and customer satisfaction. The annual reports of various commercial banks used this secondary source report by the National Bank of Ethiopia, Internet Sources and other related materials. Such secondary sources are also related data..

3.4. Research Instrument

The main research tool used in this study was the questionnaire survey. This means that the survey type is closely completed. The questionnaire used in this study was divided into two main sections. These are the dimensions of the demographic section or general questions and e-banking services section. According to the demographic section, variables such as age, gender, income level, marriage status, job and education status were asked. The Digital Banking Services section has six subsections. Six subsections were also grouped into different dimensions of digital banking services described in the conceptual framework. These subsections are delivery time, user friendliness, reliability, access, quality of service and privacy from a customer satisfaction perspective. Six subsections are available on a 5-point recart scale. On this scale, respondents were asked to indicate whether they agree/disagree with any different statements. Each of the six aspects of the digital banking service, a total of 30 questions is made up of five questions. A 5-point Likert scale with a rating of "strongly disagree (1) and "strongly agree" (5) was used.

3.5. Data Collection Procedures

Collect data from research respondents using a self-managed structured questionnaire (Cooper and Schindler 2006; Malhotra and Birks, 2007). Researchers initially required the approval of the branch managers of all five selected bank branches used in the study. With permission, the facility will be used for this study. All respondents in this study were conducted to complete the questionnaire after brief introductions and explanations of the study's goals. Research questionnaires were distributed in front of five branches during opening hours, and customers came to the bank hall. And the survey returned shortly after meeting their corresponding choices of respect.

3.6. Data Analysis Method

After relevant information was collected, the data were analyzed using two statistical methods. These techniques are descriptive and inference statistics. Common questions were analyzed using

descriptive statistics such as percentages and frequency. Additionally, questions from the digital bank should be analyzed using inference statistics such as: The use of multiple regression analysis contributed to testing conceptual frames or models. Data collected from Software Version 20 (Statistical Packages for Social Sciences) and statistically managed surveys

In analyzing the data gathered from the survey (questionnaire), and reliability would be primarily calculated using SPSS by Cronbach‘s Alpha, and content validity of the questionnaire was also established by reviewing existing literature.

3.7. Model Assumptions Normality

- For each value of the independent variable, the distribution of the dependent variable must be normal.
- The error term has a normal distribution with a mean of 0.

Equal variance

- The variance of the distribution of the dependent variable should be constant for all values of the independent variable.
- The variance of the error term is constant across cases and independent of the variables in the model.

Linearity

- The relationship between the dependent variable and each independent variable should be linear, and all observations should be independent.

Multicollinearity

- Moderate to high inter-correlations among the independent variables
- It limits the size of R.
- The model is unstable in terms of prediction.
- It is hard to interpret the significance of predictors.

3.8. Validity

Validity used in a study refers to the extent that the results of the study accurately reflect the measured variables or the researcher attempts to measure them. According to Eriksson and Genscheim-Paul (1997, p. 38), validity is defined as follows: Therefore, effectiveness deals with the success rate of measuring what research a study measures. Although there are many different types of validity (Hardy and Byrman, 2004), facial validity has been used for the purposes of this study. This is because this study should be demonstrated by preliminary review, reorganization, and reassessment of the equipment used (Hardy and Byrman, 2004).

Table 1: The Summary of the Questionnaire`s Information

Questionnaires sections	Numbers of questionnaires
General question	7
Access	5
Reliability	5
Ease of use	5
Time of delivery	5
Privacy or security	5
Service quality	5
Customer satisfaction	5
Total	45

Source: Own survey, 2024

In order to evaluate its validity, the questionnaire will be provided to a group of experts, including professors and specialists of the field; it was evaluate regarding content and comprehensibility and necessary alterations were made. Therefore, the questionnaire is adequately valid in accordance with the research objective as viewed by the experts

3.9. Ethical Consideration

This study was conducted using several ethical considerations. All respondents to the study will be first informed of the study's objectives and goals, and the questionnaire to be managed. Once the goals of the study were explained, the confidentiality and confidentiality of the subjects of study were guaranteed before being conducted in the questionnaire.

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS, AND INTERPRETATION

4.1. Introduction

This chapter presents the results and findings from the assessment of digital banking service quality at the Commercial Bank of Ethiopia (CBE) in terms of customer satisfaction. It starts with an introduction, followed by sections on response rate, respondent details, access to services, ease of use, delivery time, security and privacy, service quality, and customer satisfaction. The chapter ends by using descriptive statistics, regression analysis, and correlation to explain how the quality of digital banking services impacts customer satisfaction.

4.2. Demographic Characteristics of Respondents

Gender, age, marital status, level of education, income, types of e-banking services used, and occupation are the factors that make up the demographic information in this study. Descriptive statistics are used to show the results of this demographic information. To give a proper background on the people from whom the data was collected, these demographic factors were considered important. This is because they helped the participants understand how the different research variables are connected.

Table 2: Demographic Details of the Respondents

Characteristics		Frequency (Regularity)	Percentage (%)
Gender	Female	86	72
	Male	34	28
	Total	120	100
Age	18-29	66	55
	30-49	34	28
	50-69	13	11
	Above 69	7	6
	Total	120	100
Marital Status	Single	64	53
	Married	42	35
	Divorce/Separated	7	6
	Window	7	6
	Total	120	100
Level of Education	Not formal education	3	2
	Basic education	7	6
	TVET	6	5
	Diploma	20	17
	Degree	64	53
	Master &above	20	17
	Total	120	100

Source: Own survey data 2025

4.2.1. Gender

Given that men and women interpret digital banking service quality and its impact on customer satisfaction differently, gender is considered when analyzing customer satisfaction differences. As Table 1 above illustrates, total of 120 customers from various occupations within commercial bank of Ethiopia participated in this survey; 86 (72%) of the respondents were female, and 34 (28%) were male. These results suggest that the study had a higher proportion of female respondents than male respondents. In order to narrow the gap, the bank should be encouraged male users'.

4.2.2. Age

The age distribution of the respondents was one of the objectives of the study, as displayed in table 1 above, the results indicated that 66 (55%) of the respondents were aged 18 to 29, causing confusion and frustration; 34 (28%) were aged 30 to 49; 13 (11%) were aged 50 to 69; and 7 (6%) were over 69. It can be inferred that younger customers are more inclined to use digital banking services compared to older customers.

4.2.3. Marital Status

Table 1 shows that 64 people (53%) are single, 42 people (35%) are married, 7 people (6%) are widows, and 7 people (6%) are divorced. This result shows that single people use digital banking the most. This is probably because more customers are not married, and single customers seem to be more open to using digital banking technology compared to others.

4.2.4. Educational Level

The significance of the education level is confirmed in the study that the respondents possess a sufficient level of education to understand the ideas and language used in the survey questions. As shown in table 1 above, 3 (2%) of the respondents had no formal education, 7 (6%) had basic education, 6 (5%) had TVET, 20 (17%) had diploma, 64 (53%) had a degree, and 20 (17%) had a master‘s degree or above. Those with the highest level of education are more likely to use the service compared to others. The higher the level of education, the more varied the perception and expectations regarding action.

4.2.5. Occupations of Respondents

Table 3: Occupations of respondents

Characteristics		Frequency (Regularity)	Percentage (%)
	Self-employee	17	14
	Business men	21	18
	Private employees	32	27
	Government employees	50	41
	Total	120	100

Source: own survey data 2025

As shown in the above table 2 the highest numbers of digital banking users were government employees which is 50 (41%) from the total respondents. The second highest users were private employees which is 32 (27%), the third highest users were business men which is 21 (18%) and the least one user were self-employee accounted for 17 (14%). this implies that most of the customers using digital banking service were the government employees and private employees. the reason for this might be commercial bank of Ethiopia is one of the big and government banks of a country, all government employees paid their salary and it is the first bank firstly introduce digital banking service in the country.

Table 4: Type of e-banking service customer used

Characteristics		Frequency (Regularity)	Percentage (%)
Service type	ATM	41	34
	Point of sales/POS	6	5
	Internet banking/IB	11	9
	Mobile banking/MB	4	3
	ATM, POS &MB	22	18.5
	ATM &MB	21	17.5
	All	15	13
	Total	120	100

Source: Own survey data 2025

The majority of respondents, 41 (34%), use ATM banking services on average. 22 (18.5%) of the respondents use ATM, POS & MB, 21 (17.5%) of the respondents use both ATM & MB, while 15 (13%) use all digital banking services. A significant portion of customers rely on ATM services in addition to other digital banking options, indicating that ATM services are widely accessible to various types of customers.

4.3. Descriptive Analysis on Organizational Cultures

The study used frequency, percentage, mean, and standard deviation based on a 5-point Likert scale to summarize the different aspects of digital banking service quality offered by the organization, such as access, reliability, ease of use, time of delivery, privacy or security, and overall service quality. This helped in understanding the general views of the people surveyed. The mean score shows the average level of agreement or disagreement of the sample group with each statement. According to Marczyk, Dematteo, and Festinger (2005), a lower mean indicates that people are more

likely to disagree with the statements, while a higher mean means more people agree. According to Zaidato and Bagheri (2009), as cited in Wogari (2016), a mean score below 3.39 is considered low, a score between 3.40 and 3.79 is considered moderate, and a score above 3.8 is considered high.

4.3.1. Access Descriptive Analysis

This section covered the digital banking service quality Access element as evaluated by commercial bank of Ethiopia customers perceptions. The analysis's outcome is shown in table 5 below.

Table 5: E- banking service quality dimension analysis of Access Descriptive Statistics

N		Minimum	Maximum	Mean	Std. Deviation
CBE digital banking services operate 24 hours a day.	120	1	5	4.08	.969
ATM services are frequently available	120	1	5	3.66	1.004
It's easy to call my bank when needed.	120	1	5	4.08	.969
Mobile banking is very Useful	120	1	5	3.07	.998
I can use online banking to access my account from anywhere in the World	120	1	5	3.76	.984
Overall access	120			3.73	0.985

Source: own survey data 2025

The survey results indicated that customers generally agreed to a reasonable extent with the statement that CBE digital banking services operate 24/7 and are easy to access when needed, as reflected in Table 5 with a mean score of 4.08 and a standard deviation of 0.969. Similarly, the statement about the usefulness of mobile banking received a moderate response, with a mean score of 3.07 and a standard deviation of 0.998. Overall, the survey confirmed that customers perceived the quality of digital banking services positively, with an overall mean score of 3.73 and a standard deviation of 0.985. This suggests that customers generally view the accessibility and reliability of digital banking as important factors supporting the bank's sustainability, growth, and progress.

4.3.2. Reliability Descriptive Analysis

Table 6: E- banking service quality dimension analysis of Reliability Descriptive Statistics

N		Minimum	Maximum	Mean	Std. Deviation
The point of sale is safe to use	120	1	5	4.25	.389
All CBE digital banking services are safe to use	120	1	5	3.07	.904
CBE staff provides information appropriate to my needs	120	1	5	3.02	1.282
I can trust CBE mobile banking	120	1	5	4.20	.898
ATM service is a better alternative to withdraw money	120	1	5	3.71	.923
Overall reliability	120			3.65	0.879

Source: own survey data 2025

A high number of people said they feel the point of sale is safe to use, as shown in table 6. The average score was 4.25, with a standard deviation of 0.389. CBE staff gives information that is suitable for my needs, but the response rate is lower, with an average of 3.02 and a standard deviation of 1.282. Overall, the survey showed that customers generally agree that the digital banking service is reliable, with an average score of 3.65 and a standard deviation of 0.879.

4.3.3. Ease of use Descriptive Analysis

Table 7: E- banking service quality dimension analysis of ease of use

	N	Mean	Std. Deviation
Mobile banking information contents and texts are simple and easy to understand	120	3.77	1.005
ATM Service Instructions are clear	120	3.59	0.892
Digital banking services are easy to use	120	3.95	.928
Online banking is fun to use	120	3.83	0.90
Mobile banking doesn't require much effort	120	3.87	0.319
Overall ease of use	120	3.802	0.8088

Source: Own survey data 2025

A high response rate was observed in relation to the statement that Digital banking services are

easy to use, as seen in table 6 above, with a mean response of 3.95 and SD of 0.928. ATM Service Instructions are clear with a low to moderate response rate, with a mean answer of 3.59 and SD of 0.892. With an overall mean response of 3.802 and SD of 0.8088, the survey verified that customers generally agreed to a reasonable extent about the digital banking quality service reliability.

4.3.4. Time Delivery Descriptive Analysis

Table 8: E- banking service quality dimension analysis of Time delivery

	N	Mean	Std. Deviation
Mobile banking is very fast to use	120	3.82	1.02
ATM helps to use your time properly	120	3.96	.992
The purpose of the point of sale is to avoid holding excess cash	120	3.67	1.013
Using digital-banking services helps me complete my banking transactions faster	120	3.80	0.912
My bank has all the digital banking services I need	120	3.79	.960
Overall Time delivery	120	3.808	0.979

Source: Own survey data 2025

A high number of people agreed that ATMs help use time well, as shown in table 8, with an average score of 3.96 and a standard deviation of 0.992. The purpose of the point of sale is to keep from holding too much cash, but this had a lower to moderate agreement, with an average of 3.67 and a standard deviation of 1.013. Overall, the survey found that customers mostly agreed that digital banking provides good service in terms of time delivery, with an average score of 3.81 and a standard deviation of 0.979.

4.3.5. Privacy or Security Descriptive Analysis

Table 9: E- banking service quality dimension analysis of Privacy

	N	Mean	Std. Deviation
Using POS makes me feel safe	120	4.05	0.984
Passwords for all digital banking services are safe	120	4.15	0.997
Digital Banking Services ensure security for my business	120	3.95	0.987
I trust the security of all digital banking services	120	4.00	0.927
I feel safe when using ATM services	120	3.92	0.901
Overall privacy or security	120	4.014	0.959

Source: Own survey data 2025

A high response rate was observed in relation to the statement "Using POS makes me feel safe," as seen in table 9, with a mean response of 4.05 and SD of 0.984. I feel safe when using ATM services with a low to moderate response rate, with a mean answer of 3.92 and SD of 0.901. With an overall mean response of 4.014 and SD of 0.959, the survey verified that customers generally agreed to a reasonable extent about the digital banking quality service privacy or security.

4.3.6. Service Quality Descriptive Analysis

Table 10: Digital banking service quality dimension analysis of service quality

	N	Mean	Std. Deviation
I see digital-banking as a useful service	120	3.876	0.359
The service I obtain from the ATM is very good	120	3.517	0.75
The quality of the service I receive from mobile banking is very high	120	3.768	0.564
Digital-banking has a positive impact on the quality of banking services	120	4.04	0.979
The digital banking services of CBE is more convenient than Expected	120	4.09	1.182
Overall service quality	120	3.858	0.767

Source: Own survey data 2025

A high response rate was seen for the statement that CBE's digital banking services are more convenient than expected, as shown in table 10. The average response was 4.09 with a standard

deviation of 1.182. The service I get from the ATM is very good, with a lower to moderate response rate, averaging 3.517 and a standard deviation of 0.75. Overall, the survey showed that customers generally agreed to a reasonable extent that the quality of digital banking services is good, with an average response of 3.858 and a standard deviation of 0.767.

4.3.7. Customer Satisfaction Descriptive Analysis

Table 11: E- banking service quality dimension analysis of customer satisfaction

	N	Mean	Std. Deviation
My expectations before using online business is the same as the Current experience	120	3.94	0.892
I found ATM's financial transaction is simple and very interesting	120	3.77	1.1072
I am interested in POS banking.	120	3.84	0.890
I am satisfied with the digital banking services offered by mobile banking.	120	4.04	0.971
Overall, I am very satisfied with the quality of digital banking services provided by CBE.	120	3.83	0.867
Overall customer satisfaction	120	3.90	0.944

Source: Own survey data 2025

As shown in table 11 above, a large number of responses agreed with the statement "I am satisfied with the digital banking services offered by mobile banking." The average score was 4.04, and the standard deviation was 0.971. Another statement, "I found ATM's financial transaction is simple and very interesting," got a lower to moderate response. Its average score was 3.77, and the standard deviation was 1.1072. The overall average of all the responses was 3.90 with a standard deviation of 0.944. This suggests that customers mostly agreed somewhat with these statements. This shows that the digital banking service values each customer. Looking at the descriptive statistics for the digital banking service quality, as shown in tables 5, 6, 7, 8, 9, and 10 above, the average scores for access, reliability, ease of use, time delivery, privacy, and service quality were 3.73, 3.65, 3.802, 3.808, 4.014, and 3.858, respectively. All these average scores were above 3. This means that the dependent variables were well explained by the independent variables. The independent variables had a positive effect on the quality of digital banking services. Among all the service quality areas, privacy or

security had the highest average score of 4.014. This shows that privacy and security were the most important aspects of digital banking service quality at the Commercial Bank of Ethiopia. This leads to customer satisfaction. The reason could be that customers received high-quality service, the bank protected their account information well, and the bank's management system was efficient. This helps improve the bank's profitability while making customers happy.

4.4. Inferential Analysis

Using sample data to make conclusions or predictions about a whole group is called inferential analysis. This method allows researchers to take findings from a smaller group and apply them to a larger population. Techniques like regression analysis and confidence intervals in statistical testing are used for this purpose (Dr. Susan Hall, 2019). The study's inferential statistics, which supported the Pearson coefficient and multiple regression results, were explained in detail.

4.4.1. Correlation Analysis

Correlation is a method used to show how closely two or more variables are connected or related to each other. It means there is some evidence that the variables have a linear relationship, and their changes are generally connected to a certain degree, which is measured by the correlation coefficient (Brooks, 2008). Tables 10 and 11 show the correlation matrix for the variables. One of the research goals is to look at how organizational culture practices impact employees' work performance at AGS. The results of a Pearson Product Moment Correlation Coefficient analysis are shown in the matrix below, which helps assess the effect. The strength of the linear relationship between variables can be measured using a correlation coefficient, according to Saunder (2009). This coefficient, usually represented by the letter "r," can only have values between -1 and +1.

Table 12: Employee performance and the independent factors are correlate

		Access	Reliability	Ease of use	Time delivery	Privacy	Service quality	Customer Satisfaction
Access	Pearson Correlation	1	.445**	.623**	.430**	.474**	.324**	.663**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	120	120	120	120	120	120	120
Reliability	Pearson Correlation	.445**	1	.530**	.694**	.500**	.053**	.613**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	120	120	120	120	120	120	120
Ease of use	Pearson Correlation	.623**	.530**	1	.599**	.535**	.664**	.550**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000
	N	120	120	120	120	120	120	120
Time delivery	Pearson Correlation	.430**	.694**	.599**	1	.656**	.062**	.332**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	120	120	120	120	120	120	120
Privacy	Pearson Correlation	.474**	.500**	.535**	.656**	1	.544**	.509**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	120	120	120	120	120	120	120
Service quality	Pearson Correlation	.324**	.053	.664	.062*	.544**	1	.485**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000
	N	120	120	120	120	120	120	120
Customer satisfaction	Pearson Correlation	.663**	.613**	.550**	.332*	.509	.485**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	120	120	120	120	120	120	120

**. Correlation is significant at the 0.01 level (2-tailed). Source own survey data 2025

Table 13 shows that all the correlation values are positive, which means the variables, are linked in a positive way. If the correlation between two or more variables is more than 0.7, as Hair et al. (2014) explain, it means there might be multicollinearity.

According to Table 12, multicollinearity is not an issue because all the predictors had correlations less than 0.7. At a correlation of 0.663, the Access component has the highest link with customer satisfaction. This is followed by reliability, ease of use, privacy, service quality, and time delivery with correlations of 0.613, 0.550, 0.509, 0.485, and 0.332, respectively. Both access and reliability of a digital banking service have a strong positive link with customer satisfaction. Ease of use, privacy, and service quality also have moderate positive links with customer satisfaction, with correlations of 0.55, 0.509, and 0.485. Time delivery has a weak positive link with customer satisfaction, with a correlation of 0.332. High access to quality digital banking services shows that customer expectations are being met. When banks offer smooth digital experiences, customers feel appreciated, which increases their satisfaction. The weak link between time delivery and customer satisfaction at the Commercial Bank of Ethiopia shows that although timely service is valued, it is not the most important factor for customer satisfaction. The bank has opportunities to improve this area to further enhance customer experiences. According to Pallent's (2005) method for assessing the strength of the association, all the interpretations of the correlation coefficients provided above are valid.

Table 13: Correlation's direction and strength

Positive	Negative	Magnitude
r=0.0 to 0.20	-0.20 to 0	Very weak or very low
r=0.20 to 0.40	-0.40 to -0.20	Weak or low
r=0.40 to 0.60	-0.40 to -0.60	Moderate
r=0.60 to 0.80	-0.60 to -0.80	Strong or high
r=0.80 to 1.0	-0.80 to 1.0	Very high or very strong Source
r=1.0	-1.0	Perfectly positive or perfectly negative relationship

Source: Pallant 2005)

4.4.2. Assumption test/Model Fitness Test

According to Field (2005), linear regression uses to estimate the effect of more than one independent variables over dependent variable or to estimates the coefficient of determination of the predictors. A quintile regression analysis requires the fulfillment of a number of crucial presumptions. The research revealed that the main assumptions of multiple regressions are as follows: multicollinearity, homoscedasticity, independence of errors, linearity, and normality. Every notion is examined and described in this study. The following is a summary of these nation‘s consequences.

Assumption 1: There is a linear relationship between the DV and the IVs.

Some experts say this idea is very important because it has a big effect on how much bias there might be in the results of any analysis (Keith, 2006). The way independent and dependent variables are balanced is shown through multiple regression. To check if there's a straight line connection between the factors and the outcome, we can look at a graph that shows the predicted values against the residuals.

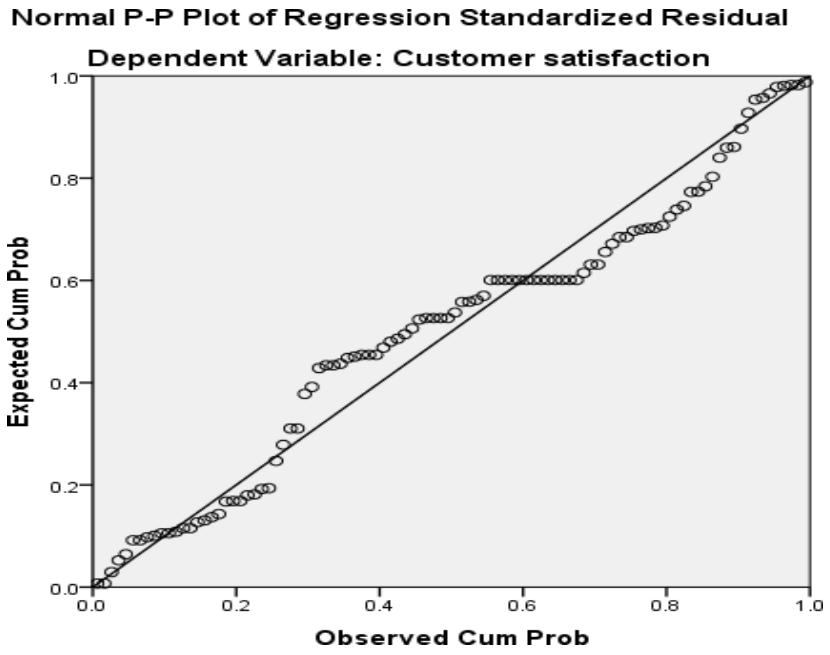


Figure 2: Testing the linearity of dependent and independent variables Source: Own survey data 2025

Because of this, a visual inspection of the distribution could provide insight into the line. Each scatter plot of the independent variables shows that the predicted relationship for the residuals follows a linear pattern around zero. Therefore, it can be concluded that there is a linear association between the variables since the correlation between the answers dan predictors is almost zero.

Assumption 2: Homoscedasticity refers to the idea that the spread of errors remains consistent across different values of the independent variables (Osborne & Waters, 2002). The differences between the predicted and actual values, called residuals, should be randomly scattered around zero, forming a shape that looks like a bell curve.

According to Keith (2006), researchers typically assume that errors are evenly spread across all variables. The distribution of the residuals remained consistent across all points of the predictor variable, as shown in the figure below (or on the curve).

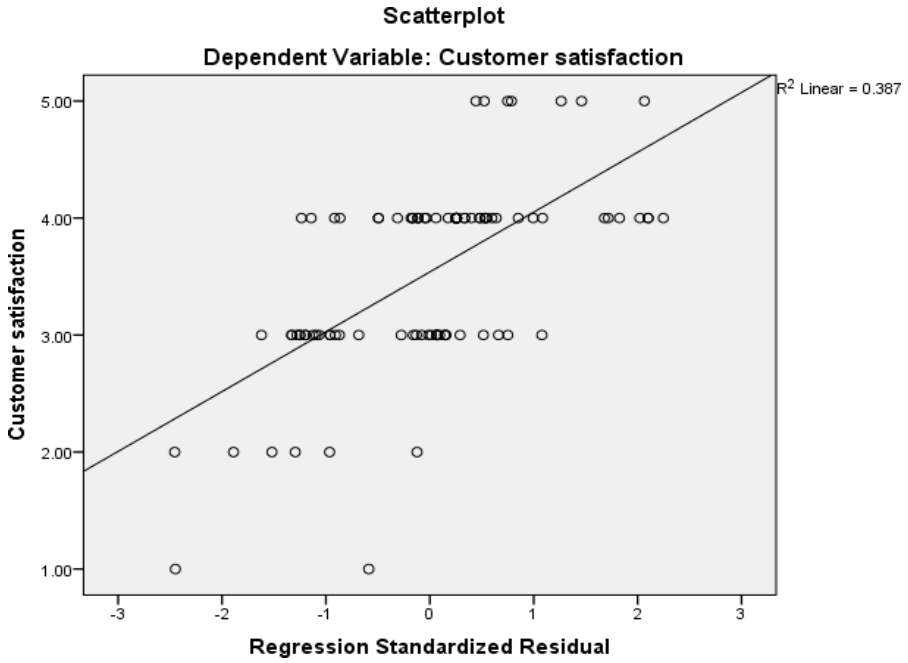


Figure 3: Scatter plot of homo-sedassticity Source: Own Survey, 2025

Assumption 3: Multicollinearity: -Multicollinearity occurs when one independent variable is strongly related to another independent variable, or when several independent variables have a high degree of correlation with each other, which can lead to confusion and frustration. If the correlation matrix shows a correlation between independent variables higher than 0.7, it might indicate a multicollinearity problem. Tolerance values can also be used to detect multicollinearity. This method

calculates the variance inflation factor (VIF) for each independent variable, showing the impact of one independent variable on all others. If the average VIF is over 10 and the tolerance is below 0.1, multicollinearity is present.

Table 14: Multicollinearity test with Variance Inflation Factor and Tolerance Value

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B		Collinearity statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	IF
1	(Constant)	11.096	2.052		5.408	.000	7.055	15.137	1.717	
	Access	.274	.090	.182	3.049	.003	.097	.450	.227	.280
	Reliability	.021	.110	.012	.190	.850	-.196	.238	.251	.543
	Ease of use	.177	.104	.114	1.695	.091	-.029	.383	.446	.397
	Time delivery	.718	.099	.501	7.259	.000	.523	.913	.470	.149
	Privacy	.189	.085	.214	2.236	.028*	.917	1.308	2.208	.453
	Service quality	.384	.108	.390	3.554	.001**	.636	0.991	.346	2.887

Source own survey data 2025

Table 14 When one independent variable is closely related to another independent variable or when several independent variables are highly correlated with each other, multicollinearity arises. Multicollinearity might be a concern if the correlation matrix shows a correlation between independent variables that is higher than 0.7. Tolerance values can also be used to calculate another approach. This calculates the Variance Inflation Factor (VIF) for each independent variable, as well as the effect of one independent variable on all other independent variables. When the average variance inflation factor (VIF) is more than 10 and the tolerance is less than 0.1, multicollinearity is present.

Fourth Assumption: Residual-Free: - This means that there is no connection or relationship between the data points. To check if the residuals are independent, we use the Durbin-Watson statistic. This statistic has a value that ranges from 0 to 4. Usually, if the value is close to 2, the residuals are independent and not connected. However, if the value is below 1 or above 3, there might be some change or pattern, which could mean further analysis is needed.

Table 15: Independent residual assumption model

	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watso
1	.694[a]	.482	.473	5.891	2.237
a. Predictors: (access, reliability, ease of use, time delivery, privacy, service quality)					
b. Dependent Variable: customer satisfaction					

Source: Own survey data 2025

The Durbin-Watson statistics for this class indicated (Durbin Watson =2.237) .as a result the researcher‘s premise regarding the independence of residuals is satisfied. Because the result falls between 1 and 3.

4.4.3. Regression Analysis

The study used a multiple regression method to look at how four independent factors organizational flexibility, consistency, engagement, and mission—affect the dependent variable, which is employee performance, with a significance level set at 0.05.

4.4.4. ANOVA (Analysis of Variance)

ANOVA analysis is typically performed to compare the average scores of many variables or groups. It is also called analysis of variance because it compares the variance between groups (Pallant, 2005).

Table 16: ANOVA analysis

ANOVA[a]						
Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
1	Regression	7870.386	4	1967.597	56.694	.000[b]
	Residual	8468.104	244	34.705		
	Total	16338.490	248			

Source: Own survey data 2025

The P-value for the F-Statistics (0.000) is less than the significance level of 0.05 (P<0.05), indicating that the model is statistically significant or appropriate. This implies that customer satisfaction is

significantly influenced by at least one of the digital banking service quality factors. The degrees of freedom (Df) refer to the greatest number of logically independent values that can change within the data sample.

F (F Value): Helps in determining whether there is a significant difference in the variances between the means of two populations.

Sig.

***: Refers to P-values and statistical significance.

4.4.5. Regression Coefficient

The average change in the dependent variable that happens when there is a one-unit change in the independent variable is shown by the coefficient. Therefore, the unstandardized beta coefficient (Î²) tells us how much each part contributes to the model on its own. A high beta (Î²) value along with a small P value (less than 0.05) means the predictor variable is not significantly contributing to the model (George and Mallery 2003).

Table 17: Regression coefficient

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	11.096	2.052		5.408	.000	7.055	15.137
Access	.274	.090	.182	3.049	.003	.097	.450
Reliability	.021	.110	.012	.190	.850	-.196	.238
Ease of use	.177	.104	.114	1.695	.091	-.029	.383
Time delivery	.718	.099	.501	7.259	.000	.523	.913
Privacy	.189	.085	.214	2.236	.028*	.917	1.308
Service quality	.384	.108	.390	3.554	.001**	.636	0.991

Source: Own survey data 2025

The un standardized beta or performance

B is the dependent variable. Its value shows the slope of the line connecting the predictor and dependent variables. T, or the t-test, measures the distance between the coefficient and zero in standard error units, indicating the magnitude of deviation from zero. According to the regression constant, employee performance would be 11.096 if all six independent variables were zero. It was also shown that, assuming other factors remain unchanged, customer satisfaction would increase by 0.274 for every unit increase in access to digital banking service quality. An increase of 0.210 in customer satisfaction would result from reliability. An increase in ease of use would lead to a 0.177 boost in customer satisfaction. An increase in time delivery would result in a 0.7178 boost in customer satisfaction. An increase in privacy of digital banking service quality would result in a 0.189 boost in customer satisfaction. An increase in service quality would result in a 0.384 boost in customer satisfaction. Table 15 above shows that, at a 95% confidence level, all factors—access, time delivery, privacy, and service quality—had a statistically significant impact on customer satisfaction.

The P-values of 0.003, 0.000, 0.028, and 0.001 for the variables access, time delivery, privacy, and service quality respectively indicate that these variables have a statistically significant influence on customer satisfaction. Ease of use and reliability do not have significant influence on customer satisfaction. However, since the P-values for reliability and ease of use were higher than the significance level of 0.05 (P>0.05), they had a statistically inconsequential impact on customer satisfaction. Customer satisfaction = 5.408 + 3.049Access + 0.190Reliability + 1.695Ease of Use + 7.259Time Delivery + 2.236Privacy + 0.887Service Quality.

3.554 SerQ +e

Where; customer satisfaction (CS) is the dependent variable

The initial independent variable is called Acce (access), reliability or Rel, is the second independent variable. Ease stands for ease of use, the third independent variable , TIM stands for time delivery , Priv stands for privacy and DerQ stands for service quality, e = Standard error .

Table 18: Model Summary with independent variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. Change
1	.694[a]	.482	.473	5.891	.482	56.694	4	244	.000

Source: Own survey data 2025

At the 0.05 significance level, this shows there is a strong connection between the six independent factors and customer satisfaction. Table 18 shows a composite correlation (R) of 0.694, which means there is a positive relationship. The R squared value is 0.482, meaning the six factors explain 48.2% of the changes in customer satisfaction. So, 48.2% of customer satisfaction is affected by the quality of digital banking services at Commercial Bank of Ethiopia. Other factors may explain the remaining 51.8% of the variation in customer satisfaction. Therefore, more research is needed to find out what those other factors are.

4.5. Test of Hypotheses

In this section, the researcher aimed to separate the alternative hypothesis for each dimension of e-banking service quality so that it would be easier to decide whether to accept or reject the alternative hypothesis. This was done using a table. To test the hypotheses, the researcher used standardized coefficients beta and p-value to determine if the hypotheses should be accepted or rejected.

Table 19: Decision of Hypothesis

Alternative	Hypothesis	Decision
Ha1	Service quality of e-banking does impact on customer satisfaction	Accepted
Ha2	Access does impact on customer satisfaction	Accepted
Ha3	Ease of use does impact on customer satisfaction	Rejected
Ha4	Time of delivery does impact on customer satisfaction	Accepted
Ha5	Privacy/security does impact on customer satisfaction	Accepted
Ha6	Reliability does impact on customer satisfaction	Rejected

Source: Own survey, 2025

The results from the regression analysis in table 20 show that out of the six dimensions, four were found to be important in affecting customer satisfaction with e-banking in Ethiopia. From the customers' perspective, access, time delivery, service quality, and security/privacy were the main factors that strongly influence their satisfaction. Additionally, it was found that reliability and ease of use did not have a significant effect on customer satisfaction.

As shown in table 20, the study found that access, time delivery, service quality, and security/privacy were important because they have a strong effect on customer satisfaction. This means the null hypothesis was rejected. On the other hand, the null hypothesis was accepted for reliability and ease of use because they did not have a significant impact on customer satisfaction according to the regression results. From this analysis, it can be seen that banks offer customers more convenience through fast service delivery via the internet, such as using websites, internet banking, mobile banking, ATMs, and POS terminals. Customers can access services without any delay or confusion. Since reliability and ease of use were not found to be important, these factors may not be major issues for customer satisfaction. However, banks must ensure the security of customers' internet banking activities and not share personal information with others to maintain trust in digital banking services.

4.6. Interpretations and Findings

The purpose of this study was to look at how the quality of digital banking services affects customer satisfaction at CBE. Information like gender, age, job, education level, monthly income, and type of digital banking services was collected to understand the general characteristics of the people involved.

In this section, the main findings and key points from the survey data analysis are discussed.

A total of 120 questionnaires were used for the analysis. The data was gathered and fully completed through sampling from the Commercial Bank of Ethiopia.

According to the study, 72% of women and 28% of men use e-banking services. This shows that most people who use digital banks are women. Looking at the age data, the youngest group was over 69 years old, with 6% of people in the study being from this group. The oldest group was between 18 and 29 years old, with 66 people in this group, making up 55% of the total surveyed. The next age

groups were 30-49 and 50-69, which accounted for 28% and 11% respectively. Most of the people surveyed were between 18 and 29 years old, which made up 55%, while those aged 30-49 made up 28%. The results show that more young people are using digital banking services in CBE.

Furthermore, the marriage status of the respondents shows that 64 people are not married, 42 are married, 7 are divorced, and 7 are widows. The results suggest that the best users of the digital banking service are singles or young people, followed by larger clients who are married. When looking at education levels, out of the total sample of digital banking users, three people had no formal education. The most common level of education was a bachelor's degree, with 64 people, which makes up 53% of those surveyed. There were 20 people with diplomas or master's degrees or higher, which is 17%. The least common level of education was TVET, which accounted for 6 to 5% of the surveyed group.

This means that digital banking services need more understanding, especially internet banking. Many users have a bachelor's degree and a master's degree. When looking at the jobs of the people surveyed, 41% worked in the government sector and 27% in the private sector. This shows that most of them were employed in the government. So, most government workers are customers of CBE. The reason is that CBE is the leading bank when it comes to introducing banking technologies and has a good public image As for the types of digital banking used by most customers, ATMs were used by 34%, followed by ATMs, POS, and MB at 22%, and ATMs and MB at 21%. From this, we can see that most customers use CBE ATMs, POS, or MB.

This means that instead of using internet banking, people prefer ATMs and mobile banking for many reasons. They might not need an internet connection. ATMs and mobile banking are simpler to use. They don‘t require much understanding and are often less expensive. In this study, both inference and descriptive analyses were used, including correlations and several linear regression analyses, to find out how the quality of digital banking services affects customer satisfaction.

The following are summaries of the analysis's findings:

Data protection or security metrics were relatively high mean score (4.014), with time delivery coming in second (3.808) and ease of use in third (3.802). However, compared to the other three dimensions, access and reliability had low mean values 3.73 and 3.65 respectively. Due to the lowest average, the quality of digital banking services in commercial banks in Ethiopia was

perceived as the least dimension in total measurements. The standard deviation is very high, indicating the variance of the wide distribution.

Here is a rephrased version of your text in clear and coherent English:

"The results indicate that the impact of service quality on customer satisfaction follows a normal distribution.

It also suggests that the respondents generally supported the idea of customer satisfaction. The study found two main outcomes through the use of inferential statistics. The first outcome shows that service quality, delivery time, and accessibility have a significant impact on customer satisfaction, and customers expect a high level of privacy and security from the digital banking services provided by the banks. The second outcome, however, reveals that ease of use and reliability do not have a significant effect on customer satisfaction. According to the empirical findings from the sampled banks in Ghana, these dimensions were found to have a strong and significant effect on customer satisfaction, as highlighted by Parasuraman et al. (1985). Therefore, this study's results do not align with those of Parasuraman et al. (1985)."

This study is similar to the work of Parasuraman et al (1985) because both found that service quality affects customer satisfaction in the same way. The idea of time, as discussed by Churchill (1982), shows that saving time is very important for people using electronic banking and shopping. However, in this study, even though delivery time was considered important, the bank did not offer time-saving services, according to the results. Also, the findings of this study match those of Parasuraman, Zeithaml, and Berry (1988) about service quality. In their research, they said that if customers expect a certain level of service quality and it matches what they actually experience, they become satisfied. If there is a big difference between what they expected and what they got, that leads to dissatisfaction. But if the service is better than expected, it makes customers really happy. In this study, customers felt that the service quality matched their expectations, so they were very satisfied with the services provided.

This study's regression results showed a positive relationship between all service quality variables and customer satisfaction, supporting the model used. The model indicates a positive or linear relationship between satisfaction and service quality. However, the reliability of digital banking services as a factor influencing customer satisfaction was found to be insignificant based on the

respondents' measurements. According to the respondents' views, they were not very satisfied with the reliability of the bank. This dissatisfaction might be due to the dissemination of their banking information and PINs. This result contradicts the bank's slogan of "you can always rely on us." Therefore, the reliability of the bank is a crucial question to address, as customer dissatisfaction could lead to a decline in profitability. Previous research by Deribe et al. (2012), Anderson and Gaile-Sarkane (2008), and Parasuraman (1995) has shown that reliability has a significant effect on customer satisfaction.

In this regard, the result was opposite to their study. This also leads to decreasing banks' profitability while customers lack trustworthiness. Regarding access in digital banking, according to the respondents' point of view, it had a significant impact on their satisfaction. For instance, there was 24/7 ATM, POS, and MB service. In this case, the customers were satisfied. According to the previous study conducted in Ghana by Kwashie W. (2012), access was a prominent factor for customer satisfaction. It was similar to the result of Olanipekun, W.D., Brimah, A.N., and Ajagbe, S.T. (2013), Olsen, LL, Johnson, MD. (2003), and Parasuraman, A., Zeithaml, VA, and Malhotra, A. (2005).

In terms of ease of use, the study found that it wasn't a big factor in customer satisfaction. This means customers found digital banking services difficult to use, or they had trouble understanding the text messages they received on their phones. The instructions on the internet banking platform were unclear, and remembering the PINs for different digital banking services was hard, especially for mobile and online banking. The importance of each factor varied. The results showed that, except for service quality and privacy, all other factors were not significant at the 5% level. This happened because customers didn't feel they had enough services available through digital banking. These findings are different from Bateson (1985) and Bowen (1986), who said reliability and ease of use are important for customer satisfaction. Looking closer, the study found that customers weren‘t interested in the fun parts of internet banking, but rather in its usefulness. This goes against Davis et al. (1992), who said people enjoy the fun aspects of internet banking more.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter concerns on the conclusion of the study. It provides summary on important findings, conclusion, recommendation and implications for next research on similar subject.

5.1. Summary of the Major Findings

Digital banking services are more convenient, efficient, and cheaper. The shift from traditional banking to digital banking has mainly happened because of changing customer needs, strong competition, and the desire to improve how banks operate and save money. Even though digital banking has a lot of potential to change how customers experience banking, it's important to look at the many challenges that come with it. This study found out the main problems faced during the implementation of digital banking.

5.1.1. The bank provides various digital banking services to customers, such as receiving and depositing funds, inter-bank transactions, international fund transfers, mobile money transactions, checking account balances, cash withdrawals, purchasing goods and services, and paying bills. However, due to various reasons, customers end up using only a limited number of the bank's digital banking services. Customers have an understanding of the digital banking services offered by the bank, but they still face trust issues.

5.1.2. The customer faces challenges in accessing digital banking services anytime and anywhere due to both internal and external issues. Internal factors include ATM cards being trapped in the machine, ATMs running out of cash, and instances where the machine deducts money from the account but does not dispense cash, inability to print receipts, and low cash withdrawal limits. External factors such as power outages and network failures also restrict the availability and convenience of ATM, mobile, and internet banking services.

5.1.3. The customer is having issues with the bank's digital banking service. They find the design difficult to use because there are not enough options in their local language, the process

for making a transaction takes too many steps, and they can't print a receipt.

5.1.4. The current limits for CBE birr and mobile banking transactions are too low.

5.1.5. Poor digital banking rules because of limited experience. There is not enough teamwork and communication between banks, regulators, and other financial organizations to spot fraud and handle refund policies in online banking.

There is no clear policy or process in place for dealing with customer questions about fraud, system problems, and mistakes made by people. Also, there is no clear law that explains the rules and conditions for using electronic banking.

5.2. Conclusions

The fast growth of digital banking services has created many chances and advantages for both banks and their customers. But making digital banking work isn't easy. There are several problems, like building trust and keeping things secure, dealing with technology issues, following rules, and making sure everyone can use it. According to the study, the main difficulties that CBE faces when setting up digital banking are these challenges;-

- Lack of trust because there isn't enough information.

This result contradicts the bank's slogan of "you can always rely on us." Therefore, the reliability of the bank is a crucial question to address, as customer dissatisfaction could lead to a decline in profitability.

- Even though there was access of 24/7 ATM Pos and MB service the customer may face ATM cards being trapped in the machine, ATMs running out of cash, and instances where the machine deducts money from the account but does not dispense cash.
- The instructions on the internet banking platform were unclear, and remembering the PINs for different digital banking services was hard, especially for mobile and online banking.
- Lack of policy and procedure on handling customer inquiries related to fraudulent activity, system malfunction & human error.
- There is no clear law that explains what terms and conditions apply to electronic banking.
- The conclusion also showed that reliability, ease of use, delivery time, and accessibility are

four aspects that do not significantly influence customer satisfaction. Therefore, we can conclude that improving the quality of e-banking is expected. Otherwise customer might go to use other alternatives.

- The results from the regression analysis show that out of the six dimensions, four were found to be important in affecting customer satisfaction with e-banking in Ethiopia. From the customers' perspective, access, time delivery, service quality, and security/privacy were the main factors that strongly influence their satisfaction. Additionally, it was found that reliability and ease of use did not have a significant effect on customer satisfaction.

5.3. Recommendations

Based on the findings of the study, the following recommendations are proposed to enhance and develop the implementation of digital banking services in CBE as a whole, with a focus on selected branches.

- ✓ According to the regression results even though the model indicates a positive or linear relationship between satisfaction and service quality the bank should focus on the reliability because it was insignificant based on the respondents.
- ✓ The bank should work on ease of use and reliability because they do not have a significant effect on customer satisfaction as compared to the other aspects.
- ✓ Service quality should be improved any time to affect customer satisfaction. Because the time is digitalization and a lot of competitors are available throughout the country A proactive approach to security involves actively testing security systems and controls, such as penetration testing, planning responses to emerging threats and vulnerabilities, and regularly reviewing both internal and external threats. They may also seek guidance from financial regulators on how to implement these measures effectively;
- ✓ Adequate staff with security expertise and responsibilities;
- ✓ Using security and monitoring tools regularly is important. This can involve things like digital signatures, which use two keys—one public and one private. The public key is used to encrypt messages before sending them, and the private key is used to decrypt them when they are received. Another example is Public Key Infrastructure, which includes policies,

processes, and technology to check, register, and confirms users in a secure system. PKI uses public key cryptography and key certification to make communications more secure.

- ✓ Consistence plans to deal with aftermaths of any security breaches.
- ✓ Promoting digital literacy and increasing awareness of the benefits of digital banking services can help build consumer trust and acceptance. This can be achieved through targeted advertising campaigns, educational brochures for new users, and offering incentives to those who use digital banking.
- ✓ Regarding the problem of not having enough rules and regulations in digital banking, financial institutions and governments should work together to promote financial inclusion and make sure everyone has equal access to digital banking services. They should create clear policies and procedures to handle mistakes in digital banking transactions, theft or fraud, and issues caused by system failures or human error. There should be clear laws that explain the terms and conditions of using digital banking.
- ✓ Investment in technological infrastructure not only improves the quality of digital banking services but also enhances their accessibility, features, and functionality, which helps to reduce confusion and frustration among users..

CBE needs to thoroughly deal with those challenges and build a safe, welcoming, and lasting digital banking system to bring lasting advantages to everyone involved.

5.4. Suggestions for Further Studies

This study looks at the main difficulties in providing digital banking services in CBE. More research should be done to find new ways to solve these problems.

REFERENCE

Abiy, D (2008), capital, weekly newspaper, March, 17, 2008

Abor, J., (2004). Technological innovations and banking in Ghana: An evaluation of customers‟ perceptions: American Academy of Financial Management, 1. [Online] Available: http://www.financialcertified.com/armstrong.html. Accessed on May 6, 2015.

Abraham H (2012). Challenges and Opportunities of Adapting electronic banking in Ethiopia. Unpublished, Addis Ababa University, Ethiopia.

Adamson I, Chan K, Handford D. (2003), Relationship marketing: customer commitment and trust as a strategy for the smaller Hong Kong corporate banking sector. International Journal of Bank marketing, 21 (6/7), 374-58

Ahasanul, H., Ahmad Z. H., Abu H. D. (2009). Issues of E – Banking transaction: An Empirical Investigation on Malaysian Customers perception. Journal of Applied Sciences, 9(10), 1870 - 1879. No.3, pp. 240-250.

Amanyehun, R (2011), Mobile Commerce First from Dashen, Addis Fortune News, Available at: http//:www.addisfortune.com/archive/2011/January/ week4/, Viewed September 14, 2011.

Anderson, I., Gaile-Sarkane, E. (2008). Influence of factors on consumer behavior, in the 5th International Scientific Conference ―Business and Management‘ 2008‖. Vilnius, Lithuania, May 16 17. Vilnius, Technika, 246–252.

Asrat, S 2010, Reporter, weekly newspaper.

Balachandher K. G., Santha V, Norhazlin I. and Rajendra P, (2001). Electronic Banking in Malaysia: A Note on Evolution of Services and Consumer Reactions‖

Bambore PL (2013) Customer satisfaction and electronic banking service on some selected banks of Ethiopia. International Journal of Research in Computer Application & Mana 3: 133.

Bateson (1985), ―SERVQUAL: review, critique, and research agenda‖. European Journal of Marketing, Vol. 30 No. 1, pp. 8-32.

Bateson (1995), ―SERVQUAL: review, critique, research agenda‖, European Journal of Marketing, Vol. 30 No. 1, pp. 8-32.

Best, J.W and hhan, J.V (1995). Research in education (7th ed.). Prentice Hall press board, New York.

Binyam, T (2009, February). Daily Monitor pp. 20

Bitner, M. J. e Hubbert, A. R. (1994). ―Encounter Satisfaction versus Overall Satisfaction versus Quality the Customer's Voice‖. In: Rust, R. e Oliver, R. (Eds.) Service Quality New Directions in Theory and Practice. Thousand Oaks, Sage Publications, 72-94.

Black, N.J., Lockett, A., Winklhofer, H., & Ennew, C. (1999). The adoption of Internet financial services: A qualitative study. International Journal of Retail &Distribution Management, 29(8), 390-398.

Bowen, J. (1986). The relationship between customer loyalty and customer satisfaction. International Journal of Contemporary Hospitality Management, 13(5), 213-7.

Carman, J.M. (1990), ―Consumer perceptions of service quality: an assessment of the SERVQUAL dimensions‖, Journal of Retailing, Vol. 66 No. 1, pp. 33-5.

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

Cheng, T., Lam, D. & Yeung, A. (2006) Adoption of internet banking: an empirical study in Hong Kong. Decision Support Systems, 42, 1558-1572.

Cheung, M.I. and Liao, Z. (2002). Internet-based e-banking and consumer attitudes: an empirical study. Information and Management, 39(4): 283 – 295.

Chong, S & Pervan, G 2007,`Factors Influencing the extent of deployment of electronic commerce for small business and medium sized enterprises', Journal of Electronic commerce in organizations, 5(1):22.

Churchill GAJ, Surprenant C. 1982. An investigation into the determinants of customer satisfaction. Journal of Marketing Research, 19, 491-504.

Clottey, T. A., and Collier, D.A. (2008). "Drivers of Customer Loyalty In A Retail Store Environment." Journal of Service Science, 3rd Quarter,

Cooper, D. R., & Schindler, P. S. (2006). Business research methods (10th ed.). New York, NY: McGraw-Hill

Creswell, J.W. (1994) Research design: Qualitative and Quantitative Approaches. California, SAGE Publications Inc.

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

Cronbach, L. (1971). Test validation. In Thorndike, R. (Ed.) Educational Measurement.

Cronin, JJ & Taylor, SA 1992, "Measuring service quality: a reexamination and extension", Journal of Marketing, vol. 56, no.3, pp. 55-68.

D.M. and Hise, R.T. (2000), ―E-satisfaction: an initial examination‖, Journal of Retailing, Vol. 76 No. 3, pp. 309-22

Dabholkar, P. A., Thorpe, D. I., and Rentz, J.O. (1996). A measure of service quality for retail stores: scale development and validation. Journal of the Academy of Marketing Science, 24 (1), 3- 16.

Dabholkar, PA & Bagozzi, RP 2002, „An attitudinal model of technology-based self-service: moderating effects of consumer traits and situational factors", Journal of the Academy of Marketing Science, vol. 30, no. 2, pp. 184-202

Daft L, and Richard L., (1982).Bureaucratic Versus Non bureaucratic Structure and the Process of Innovation and Changes. In Research in the Sociology of Organizations Vol. 1, pp 129-166.

Daniel, E. (1999). Provision of Electronic Banking in the UK and the Republic of Ireland, International Journal of Bank Marketing, Vol. 17, No. 2, pp. 72–82.

Davis, F. (1986). A technology acceptance model for empirically testing New End-User Information System: Theory and Results. Unpublished Ph.D. Thesis. MIT Salon School of Management. Cambridge, MA.

Davis, F. D., Bagozzi, R. P. & Warshaw, P. R. (1989) User acceptance of computer technology: comparison of two theoretical models. Journal of Management Science, Vol.35, No.8, 982-1003.

Delvin, J. (1995). Technology and Innovation in Retail Banking Distribution. International Journal of Bank Marketing, 13(19-25).

Deribe B, Deribie E (2012). Evaluation of customer satisfaction on bank services: An empirical

analysis (Jimma commercial bank of Ethiopia). Basic Research Journal of Business Management and Accounts, 1: 64-71. 14.

Durkin, M. (2004). ―In search of the Internet-banking customer exploring the use of decision styles‖. The International Journal of Bank Marketing Vol. 22, No. 7, page (484– 503).

Earl, M. (2000). Evolving the E-Business. Journal of Business Strategy Review, Vol.11, No.2, pp 33-38.

Emerald Internet Research, Vol. 17, No. 3, pp. 323-339.

Enhancing Human Resource Performance and Customer Satisfaction: Evidence from Guaranty Trust Bank PLC, Nigeria. International Journal of Business and Behavioral Sciences. Vol. 3, No.4; pp. 36-44.

Eriksson, L.T., & Wiederscheim-Paul, F. (1997). ―Customer Acceptance of Internet Banking in Estonia‖, International Journal of Bank Marketing, Vol. 23, No: 2, pp. 200-216.

Essinger, J. (1999). The virtual banking revolution: the customer, the bank and the future 1st ed. London, UK: International Thomson Business Press.

Flavian, C., Torres, E., and Guinaliu, M. (2004). Corporate image measurement: a further problem for the tangibilization of internet banking services. International Journal of Bank Marketing, 22 (5), 366-84.

Gan, C and Clemes, M. (2006). A logit analysis of electronic banking in New Zealand. International Journal of Bank Marketing, 24 (6), 360-383.

Gardachew, W 2010, ` Electronic-banking in Ethiopia: practices, opportunities and Challenges‘, Journal of internet Banking and commerce,15(2):2-9

Gonzalez, M. E. (2008). An Alternative Approach in Service Quality: An E-Banking Case Study. Journal of Quality Manage, 15, pp. 41-48.

Gummesson, E. (1998), ―Productivity, quality and relationship marketing in service operations‖, International Journal of Contemporary Hospitality Management, Vol. 10 No. 1, pp. 4-15.

Gupta S, Zeithaml V. (2006). Customer metrics and their impact on financial performance. Journal of E-Marketing Science, 25 (6), 718-39

Gupta, P. K. (2008). Internet Banking in India: Consumer Concern and Bank Strategies. Global Journal of Business Research, Vol. 2, No. 1, 2008, pp. 43-51.

Guriting, P. & Ndubisi, N. O. (2006) Borneo online banking: evaluating customer perceptions and behavioural intention. Management Research News Vol.29, No.1/2, 6-15.

Haque. (2009). Issue of E-banking transaction an empirical investigation on Malaysian customers perception.

Hardy, M., & Bryman, A. (2004). Handbook of Data Analysis. SAGE Publications.

Hawkins, J. (2001) ―The Banking Industry in the Emerging Market Economies: Competition, Consolidation and Systemic Stability: An Overview‖, Bank for International Settlements, No. 4, page (1-158).

Howcroft, B., Hamilton, R. and Hewer, P. (2002). Consumer attitude and the usage and adoption of home-based banking in the United Kingdom. The International Journal of Bank Marketing, 20(3), 111-121

Jamal A, Nasser K. (2003). Factors influencing customer satisfaction in the retail banking sector in Pakistan. International Journal of Commerce and management, 13(2), 29- 53.

Jamal A. (2004). Retail banking and customer behavior: a study of self-concept, satisfaction and technology usage. International Review of Retailing, Distribution and Consumer Research, 14 (3), 357-79.

Johnson MD, Fornell C.1991. A framework for comparing customer satisfaction across individuals and product categories. Journal of Economic Psychology, 12, 267-286

Johnston, R. (1997). Identify the critical determinants of service quality in retail banking: Importance and Effect. International Journal of Bank Marketing, 15(4), 111-116.

Kamel, S. (2005). The Use of Information Technology to Transform the Banking Sector in Developing Nations, Information Technology for Development, Vol.11, No. 4, pp. 305-312.

Karjaluoto, H. (2002) ―Electronic Banking in Finland, Consumer Beliefs, Attitudes, Intentions, and Behaviors‖, Jyvaskyla Studies in Business and Economics 18, page (1- 118).

Kotler, P. (2003). Marketing Management. International Edition, Prentice Hall. Vol.

Kutner, Nachtsheim and Neter (2004). Applied Linear Regression Models, 4th edition, Mc Graw-Hill Irwin.

Kwashie W. (2012). The impact of electronic banking on service delivery to customers of Ghana commercial bank limited. International journal of commerce and management, JULY 2012 pp. 30

Leow, Hock Bee (1999), "New Distribution Channels in banking Services. Banker‘s Journal of Malaysia, No.110, June 1999, p.48-56.

Liao, Z. and M.T. Cheung. (2003). Challenges to Internet E-banking. Communications of the ACM, 46(12), 248-250.

Madu CN, Madu AA. (2002). Dimensions of e-quality. International Journal of Quality & Reliability Management, 19 (3), 246-58

Maholtra, P. & Singh, B. (2007). Determinants of Internet Banking Adoption by Banks in India.

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

Martin, O. and Kwaku, N. (2016). The Contribution of Electronic Banking to Customer Satisfaction: A Case of Gcb Bank Limited –Koforidua. International Journal of Managing Information Technology (IJMIT), Vol.8, No.1 pp. 3-11

Mohammed, S. K.; Siba, S. M. & Sree .K. (2009). Service Quality Evaluation in Internet Banking: An Empirical Study in India, International Journal of Indian Culture and Business Management, Vol. 2, No. 1. Natalie Anderson. pp. 11 – 36.

Mols N P (1999), The Internet and banks‟ strategic distribution channel decision, International Journal of Bank marketing , Vol.17, No.6, pp.295-300.

Nunnally, J.C. & Bernstein, I.H. (1994). Psychometric theory. New York: McGraw-Hill.

Olanipekun, W.D, Brimah, A.N and Ajagbe, S.T (2013). Role of Electronic Banking in Oliver, R.L. (1999). Whence consumer loyalty? Journal of Marketing, 63, 33-44.

Oliver, Richard L. (1980). A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions. Journal of Marketing Research, 17, (September), 460-469.

Oliver, Richard, L. (1981). Measurement and Evaluation of Satisfaction Process in Retail Setting. Journal of Retailing, 57, (fall), 25-48.

Olsen LL, Johnson MD. 2003. Service equity, satisfaction, and loyalty: From transaction- specific to cumulative evaluations. Journal of Service Research, 5,184-195.

Parasuraman A, Zeithaml VA, Malhotra A. (2005). E-S-QUAL: a multiple-item scale for assessing electronic service quality. Journal of Service Research, 7 (3), 213-233.

Parasuraman A. (2000). Technology readiness index (TRI): a multiple-item scale to measure readiness to embrace new technologies. Journal of Service Research, 2 (4), 307-320

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality. Journal of Retailing, Volume 64, Number 1, 12-40.

Parasuraman, A., Zeithaml, V.A., & Berry, L.L. (1985). A conceptual model of service quality and its implications for future research. Journal of Marketing, 49.

Pavlou, P. (2003). Consumer acceptance of electronic commerce: integrating trust and risk with the technology acceptance model. International Journal of Electronic Commerce, 7, 101-134.

Pew. (2003). Convenience is King. Pew Internet and American Life Project. Retrieved fromWorldWideWebon15February,2006,fromwww.pewInternet.org/reports/reports. asp? Report=77&Section=ReportLevel1&Field=Level1ID&ID=342.

Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahnila, S. (2004). Consumer acceptance of online banking: An extension of the technology acceptance model. Journal of Internet Research, 52(2), 67-83.

Polatoglu, V.N. and Ekin, S. (2001). An empirical investigation of the Turkish consumer‘s acceptance of internet banking services. International Journal of Bank Marketing, 19(4), 156-165.

Prince A. (2015). The effect of electronic banking on customer service delivery in Kumasi metropolis. June, 2015 pp. 27-45

Rose, Peter S., (1999) ―Commercial Bank Management‖ (4th Ed), Irwin/McGraw- Hill, Boston, USA.

Rotchana kitumnuai Siriluck and Speece Mark. (2003). Barriers to Internet Banking Adoption: A Qualitative Study among Corporate Customers in Thailand. International Journal of Bank Management, 21 (6/7), 312-323.

Salehi, M. & Zhila, A. (2008). Fraud Detection and Audit Expectation Gap: Empirical Evidence from Iranian Bankers, International Journal of Business and Management, Vol. 3, No. 10, pp. 65-77

Steven A. (2002), Information System: The information of E-Business, New Jersey Szymanski,

Timothy T. (2012). Electronic Banking Services and Customer Satisfaction in the Nigerian Banking Industry, International Journal of Business and Management Tomorrow, Vol.2, No. 3, (2012) 1-8

Twumasi, P. A. (2001). Social Research in Rural Communities, 2nd Ed. Accra: Ghana Universities Press. Pp. 23-30 Washington, D. C: American Council on Education.

Yang, Z., & Fang X. (2004). Online service quality dimensions and their relationships with satisfaction. A content analysis of customer reviews of securities brokerage services. International Journal of Service Industry Management, 15(3).

Yin, R. K. (2003), Case Study Research: Design and Methods, (3rd Ed.), Thousand Oaks, CA: SAGE Publications

Yohannes A (2010) Key factors that determine adoption of internet banking in Ethiopia. Unpublished, Addis Ababa, Ethiopia

Zeithaml, A. A. and Bitner, M. J. (2000). Service marketing: Integrating Customer Focus across the firm. Second Edition. New York: Irwin McGraw-Hill.

Zeithaml, V.A., Parasuraman, A. and Malhotra, A. (2000). Service quality delivery through web sites: a critical review of extant knowledge. Journal of the Academy of Marketing Science, 30(4), 362-75.

Zikmund, W. G. (1994). Business research methods. Australia, South Western

APPENDIX – Questionnaire

Addis Ababa University

College of Business and Economics

Questionnaire to be Filled by Customers of CBE

Dear Respondent

I would like to thank you in advance for your willingness in filling in this questionnaire. The purpose of the questionnaire is to collect primary data from customers for the study titled **"Assessment of digital banking service quality in commercial bank of Ethiopia"** as a partial fulfillment of the Master of Arts in public management and policy at Addis Ababa University in business and Management College. For the successful achievement of the study, your genuine response for the questions is important and I assure you that your responses will be confidential. If you have any question, please contact me at Mobile: 0900064025 or e-mail:Kassahunassefa999@mail.com

Instruction

No need to write your name

Answer by making a √ mark,

Part I- Demographic Profile

1. Gender: Male ☐ Female ☐

2. Age: below 25 ☐ 26-35 ☐ 36-45 ☐ Above 45 ☐

3. Educational Background: Vocational Education/Certificate ☐ College Diploma ☐

Degree ☐ Masters ☐ PhD ☐

4. Your current position: Top level Manager ☐ S Supervisor ☐

Professionals and experts ☐ support staff ☐

5 Years of experience 1-5 ☐ 6-10 ☐ 11-15 ☐ Above15 ☐

Access	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. CBE digital banking services operate 24 hours a day.					
2. ATM services are frequently available.					
3. It's easy to call my bank when needed.					
4. Mobile banking is very useful					
5. I can use online banking to access my account from anywhere in the world					
Reliability	**1**	**2**	**3**	**4**	**5**
6. The point of sale is safe to use					
7. All CBE digital banking services are safe to use					
8. CBE staff provides information appropriate to my needs.					
9. I can trust CBE mobile banking					
10. ATM service is a better alternative to withdraw money					
Ease of use	**1**	**2**	**3**	**4**	**5**
11. Mobile banking information contents And texts are simple and easy to understand					
12. ATM Service Instructions are clear					
13. digital banking services are easy to use					
14. Online banking is fun to use					
15. Mobile banking doesn't require much effort					
Time of delivery	**1**	**2**	**3**	**4**	**5**
16. Mobile banking is very fast to use					
17. ATM helps to use your time properly					
18. The purpose of the point of sale is to avoid holding excess cash					
19. Using digital-banking services helps me complete my banking transactions faster.					
20. My bank has all the digital banking services I need					
Privacy or security	**1**	**2**	**3**	**4**	**5**
21. Using POS makes me feel safe.					

22. Passwords for all digital banking services are safe					
23. Digital Banking Services ensure security for my business.					
24. I trust the security of all digital banking services.					
25. I feel safe when using ATM services					
Service quality	**1**	**2**	**3**	**4**	**5**
26. I see digital-banking as a useful service					
27. The service I obtain from the ATM is very good					
28. The quality of the service I receive from mobile banking is very high					
29. Digital-banking has a positive impact on the quality of banking services					
30. The digital banking services of CBE is more convenient than expected					
Customer satisfaction	**1**	**2**	**3**	**4**	**5**
31. My expectations before using online business is the same as the Current experience					
32. I found ATM's financial transaction is simple and very interesting.					
33. I am interested in POS banking.					
34. I am satisfied with the digital banking services offered by mobile banking.					
35. Overall, I am very satisfied with the quality of digital banking services provided by CBE.					

Thank you