



**Addis Ababa University**  
**School of Commerce**  
**Graduate Program**

**THE EFFECT OF E-COMMERCE SERVICES ON CUSTOMER SATISFACTION IN  
CASE OF COMMERCIAL BANK OF ETHIOPIA**

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**A THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY SCHOOL OF  
COMMERCE DISTANCE PROGRAM STUDIES IN PARTIAL FULL  
FILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER  
OF SCIENCE MARKETING MANAGEMENT**

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**JUNE, 2022**

**ADDIS ABABA, ETHIOPIA**



## CANDIDATE'S DECLARATION

I do hereby declare to the senate of Addis Ababa University that the work which is being presented in this thesis entitled **THE EFFECT OF E-COMMERCE SERVICES ON CUSTOMER SATISFACTION IN CASE OF COMMERCIAL BANK OF ETHIOPIA** with the guidance and support of the research advisor Belaynesh Tefera (Phd), is my own original work, that it has not been submitted partially; or in full, by any other person for an award of a degree in any other university or institution and that all sources of material used for the thesis have been duly acknowledged.

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## LETTER OF CERTIFICATION

This is to certify that Mhretab Shishay carried out his study on the topic entitled **THE EFFECT OF E-COMMERCE SERVICES ON CUSTOMER SATISFACTION IN CASE OF COMMERCIAL BANK OF ETHIOPIA** I have directed the student in undertaking the research reported herein and I confirm that the student has effected all corrections suggested and suitable for submission for the award of the Master's Degree in Marketing Management stream to the best of my knowledge.

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**APPROVAL**

This is to certify that this thesis has been submitted in partial fulfillment of the requirements for the award of master in marketing management with my approval as Advisor and Examiner.

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## ACKNOWLEDGEMENTS

First and foremost, I want to thank the Almighty God and his beloved mother St. Virgin Mary for abundant Love, every blessing, guard, and provision of good health and for permitting me the gift of life.

I would like to express my deepest appreciation to my advisor, Belaynesh Tefera (PhD) for his unreserved guidance, advice, critical comments, persistent help and constructive suggestions. Besides, his diligent, fascinating guide, good advice, useful criticism, support, and flexibility are learnable.

I feel grateful to acknowledge here tireless effort of my family specially my sister Seble Shishay.

Finally, I would like to thank all my families and friends specially my friend Ruta Ashagre for their support in all matters from the start to the end of the study.

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## **Abbreviations**

ANOVA	Analysis of Variance
ATM	Automatic Teller Machine
CBE	Commercial Bank of Ethiopia
CSEB	Customer Satisfaction in Electronic Banking
EBSQ	Electronic Banking Service Quality
EFT	Electronic Fund Transfer
ICT	Information Communication Technology
NBE	National Bank of Ethiopia
POS	Point Of Sale/Purchase
SERVQUAL	Service Quality
SPSS	Statistical Package for Social Science

## ABSTRACT

The objective of the research is to *examine the effect* of E-commerce on customer Satisfaction in commercial bank of Ethiopia in Megenagna district. A total 399 Respondents were participated. the study was both descriptive and explanatory research design and used the mixed research approach. The data was analyzed by undertaking the descriptive statistics; Pearson correlation and multiple regression analysis The findings show that service quality dimensions (reliability, customer awareness, responsiveness, empathy and Security) have positive and significant relationship with customer satisfaction in e-commerce service. The three service quality dimensions (reliability, responsiveness, & customer awareness) have positive and significant effect on customer satisfaction on ecommerce services of Commercial Bank of Ethiopia. However empathy and security have a positive but insignificant impact on customer satisfaction. Thus the particular management bodies of commercial bank of Ethiopia should work more to strengthen these service dimensions. Although the opportunities of e-commerce is promising, the major challenging problems faced by commercial bank of Ethiopia in relation to e-commerce is infrastructural barriers such as network failure, low level of internet penetration, unreliable power supply and lack of ICT knowledge from the customer side so that commercial bank of Ethiopia should enhance their internal capacity and work with the government bodies (Ethio-Telecom, Ethiopian electric power & NBE) to acquire modern technological advancement consistently. In addition, the bank should plan and implement the instrument of increasing their electronic banking customers' confidence, knowledge, and technological skill via sustainable awareness creation platforms of using e- commerce.

**Key words:** CBE, E-commerce, Customer satisfaction and SERVQUAL model.



## **CHAPTER ONE**

### **1 INTRODUCTION**

The introduction chapter is tried to introduce the study using ten sub chapter titles. This chapter tries to discuss background of the study, statement of the problem, research questions, and objectives of the study, hypothesis of the research, key terms, scope, significance, limitation and organization of the study.

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

Technological innovations plays an significant role in banking sector by building value for banks and customers, that it facilitates customers to do banking transactions without visiting branches of the bank. On the other hand E-commerce services have supported financial sectors like bank institutions to compete more successfully in the global and local business environment by spreading their products and services beyond the restriction of time and space (Turban 2008).

E-commerce banking is considered as a new revolution of the old-style banking services which offers customers the highest expediency for performing banking transactions via electronic. All banks, mainly the large banks and mutual banks, have gradually increased their number of e-commerce banking services offered to customers over the past decades (Momeni, 2013). Advances in e-commerce banking technology have made new ways of handling banking transactions, especially via the online banking channel. A feature of the banking industry across the globe has been that it is increasingly becoming turbulent and competitive, characterized by an increasing trend towards internationalization, mergers, takeovers and consolidation of the banking industry(Muhammad, Akin & Abdul, 2015).

E-commerce has improved business activities, the processes function is that part of the business that is concerned with the management of the business process that produces the goods and services supplied to the customer. These processes of order fulfillment and delivery are the heart of every business as they are the means by which an organization satisfies its customers. An organization can be considered to have e-operations if it uses information technologies (ICT) in the management of its order fulfillment and delivery processes (Fraser and McDonald 2000).

E-commerce banking products and services are means used by bank institutions to carry out their bank transactions without necessarily coming into physical contact with their clients. These

services include Automatic Teller Machines (ATMs), mobile banking, online (internet banking) banking, POS and other methods

Electronic commerce is sharing business information, maintaining business relationships and conducting business transactions by means of telecommunications networks'. E-Commerce is one of the most important facets of the Internet to have emerged in the recent times. E-commerce or electronic commerce involves carrying out business over the Internet with the assistance of computers, which are linked to each other forming a network. To be specific ecommerce would be buying and selling of goods and services and transfer of funds through digital communications (Vladimir Zwass 2001).

Before starting of E-commerce banking services in Ethiopia, all banks operates the activities in Ethiopia had provided service to customers by using old-style (off line banking) systems. Bank customers were highly dissatisfied by the time wasted in travelling for search of bank branches and the long waiting time to access the account. (Mohamed, 2014)

An E-commerce product has been widely used in technologically advanced countries and is in starting stage phase in developing countries. In case of Ethiopia, cash method of bank transaction is still the maximum dominant method of banking system and e-commerce systems are at a starting period. In the face of fast expansion of e-commerce systems all over the developed and the developing world, Ethiopia's financial industry cannot work an exception in expanding the use of the system.

The application of E-commerce banking services can bring about various competitive advantages for banks in today's highly competitive banking industry. E-commerce transactions are much low-priced than the traditional banking system transactions (Shah and Clarke, 2009). Some of the advantages related with implementation of E-commerce banking services are: it can provide a cost effective way of conducting business and enriching relationship with customers by offering superior services, and innovative products, which may be customized to individual needs (Shah and Clarke, 2009) It is also beneficial to the easier documentation and transaction tracking, reducing the costs of printing, maintenance and distribution of banknotes, and it offers multiple payment options and gives immediate notification on all transactions on customers' account, etc. (Karimzadeha et al, 2014).

E- Commerce banking has improved as well as changed the aspect of commercial banking through linking and connecting geographical, industrial and regulatory gaps and creating

innovative products as well as services for both banks and customers (Khan & Karim, 2010). In other words, Internet technology holds the potential to fundamentally change banks and the banking industry. An understanding of the extent of the customers' adoption or utilization of internet banking services has become critical. Sarlak and Hastiani (2011) recommended that banks and financial companies must survey customers' requirements on a regular basis in order to understand factors that can affect their adoption or usage of e-commerce banking.

Thornton and White (2011) asserted that customer orientations towards convenience, service, technology, change, computing knowledge, and the Internet affected the usage of different channels. Howcroft, et al., (2002) the main important features encouraging customers to use e-commerce banking are lower fee followed by decreasing paperwork and human error, which subsequently minimize disputes.

The Modern managing science perspective considers customer satisfaction as a starting point standard of performance and a possible standard of excellence for any business institute. Especially, bank sector due to give similar services compete together in order to succeed customer needs. E- Commerce Banking services are a new method that most financial sectors especially banks have used to attain its objectives (AMIRI, and Faghani, 2012).

The bank performances is directly related to efficiency and effectiveness of e-commerce banking services, but on the other closet controls and standards are required to minimize losses related with commerce banking services. The banks have to balance these two possibilities in order not to impair its general success. This is only possible if overall effects of e-commerce on the banks and its customers are understood (Aduda and Kingoo, 2012).

The fast growing information and communication technology (ICT) is knocking the front door of every organization in the world, where Ethiopian banks would never be exceptional. In the face of rapid expansion of electronic payment (E-payment) systems all over the developed and the developing world, Ethiopian's financial sector cannot remain an exception in expanding the use of the system (Gardachew 2010, p.2). With an improvement of customer knowledge, little progresses in telecom infrastructure and international relations, however, the current banking system is changing and starts providing some electronic banking services. Therefore all banks operating in Ethiopia should recognize the need for introducing electronic banking system to satisfy their customers and meet the minimum technology based service quality necessities by

their customers should know the measurements the customers' value most in e-commerce banking services.

Therefore, this study targeted to examine the level of customers satisfaction in e-commerce banking services using service quality dimensions and identifying the challenges in e-commerce banking practices in commercial bank of Ethiopia specifically in Megenegna district one of the districts in Addis Ababa selected branches.

## **1.2 Statement of the problem**

The use of technology practices is the pillar for better effects in banking industries. This is articulated in the HSBC report of 2000, which stated that benefits from technology are more than three times its cost. Today's banking situation demands continuous improvements and increase in order to meet the yearnings and objectives of the ever-demanding customers. Hence, banks need to roll out new products and services quickly and effectively, using up-to-date modern cutting edge technology (Augusto, 2002).

Using of e-commerce payment method in banking industry; it has made the transaction of money easier, time saving and convenient and created value for banks and customers. E-commerce banking service is a form of banking service where funds are transferred through an exchange of electronic signals between financial institutions, rather than exchange of cash, cheques and other negotiable instruments (Melak 2007). E-commerce banking is widely expanding throughout both developed and developing countries with rapidly growing advanced information technologies.

Ethiopian banks industry, although it is undeveloped when compared with other developed countries, cannot be remaining an exception in expanding the use of the system. The modern E-commerce banking methods like Automatic Tailor Machine (ATM), Debit Card, Credit Card, Tele Banking, Mobile-Banking, Internet Banking and others(like cbeBirr Amole and Mbirr) are new to the Ethiopian banking sector.

However, customers and banks in Ethiopia were missed to enjoy with this new technology unlike developed and other developed African countries. This is due to lack of awareness in technology, undeveloped ICT infrastructures, low internet access and others. (Ayana, 2014).

On other hand, there are some opportunities created to widely expanding the use of E-commerce banking methods such as increased awareness of the students on ICT, government commitment on new technology, UNECA, World Bank and UNCTDA support to developing countries on ICT (UNCTDA 2004). Moreover, the benefits derived from the adoption of E-banking are also

considered as additional opportunity to the banks. In spite of better opportunities created relative to 10-15 years back, E-commerce banking service has not been able to diffuse in to society in Ethiopia given low internet access. In some advanced 4G internet facilities also providing by the banking sector in E-commerce banking services area.(Shaik and Lisanework ).

Commercial Bank of Ethiopia is the pioneer to introduce Automated Teller Machine (ATM) services to local users in 2008 with 8 ATM machines located in Addis Ababa. Currently, the bank provides electronic banking systems including ATM, Point of Sale Terminal (POS), Card Banking, Internet Banking, cbeBirr and Mobile Banking.

Customers have expectations and criteria when they judge whether the provided banking services is satisfactory or not. Due to the high competition in a banking sector, the perception of customers and potential customers are also divided according to the services that they want to achieve (Shanka, 2012).

The proper identification of customer satisfaction helps to retain customers and to increase awareness; profitability and effectiveness of online banking services and find out the factors affect online customer satisfaction (Zameer, et.al., 2015.). In relation to this, there are the major online customer oriented opportunities and challenges for the banking sector in Ethiopia, so the Ethiopian commercial. Commercial bank of Ethiopia has been launched online banking services in order to give good services and satisfy the customer by saving time, errors, and costs. But to expand the service better it requires knowing whether the customer is satisfied by the service or not. But in order to understand the customer satisfaction better, there are no such studies (Negi, 2009).

Among those Fikadu (2013) conducted research on customer satisfaction and service quality and he used qualitative research method to conduct the study. According to his research, the result indicates that CBE faces various problems especially regarding quality service and he recommended in his paper to carry out research in similar area so as to generalize the issues in CBE. So the researcher wanted to examine customer satisfaction on the e- commerce products in case of commercial bank of Ethiopia Megegnagna district.

Assefa (2013) conducted a study on the impact of e-banking on customer satisfaction in two branches of private banks in Gondar City. The researcher used qualitative approach in analyzing this study and it was limited to customers of two private banks only. In addition to this, only ATM 3 was considered as e-banking because there was no any other form of e-banking in the study

area. Bultum (2014) also studied factors that affect adoption of e-banking in the Ethiopian banking industry. Still this study was entirely focused on factors that affect adoption of e-banking. Satisfaction of customers towards e-commerce banking service required to be investigated to understand the relevancy of e-commerce banking products in the CBE. Therefore, the present study linked the gap of methodology by using quantitative and quantitative approach which employs SERVQUAL model.

Therefore this study anticipated to identify what the major practice available are in commercial Bank of Ethiopia specifically on the Megenagna district and what are the major challenges which hinder the effective application of E-commerce banking (mobile banking and internet banking) in commercial Bank of Ethiopia and to comprehend the extent use of E-commerce products in the district and identify the possible factors responsible for shifting growth of this service based on the research problems discussed above.

### **1.3 Research Questions**

Based on the problem stated in this study, researcher trays develop the following research questions.

To gain a complete and accepting of the phenomenon under research, and in order to be able to provide an appropriate explanation for answering that question,

- 1) What are the relationship between customer satisfaction and the e-commerce banking services in CBE?
- 2) What are the basic e-commerce banking service dimensions that have influence on customer satisfaction?
- 3) What are the possibilities of E-commerce banking services to improve customer satisfaction?
- 4) What are the challenges in using E-commerce banking services to improve customers' satisfaction?

### **1.4 Objectives of the Study**

#### **1.4.1 General objective**

The general objective of the study is to find out the effect of E-commerce on customer Satisfaction in commercial bank of Ethiopia particularly in case of Megenagna district.

#### **1.4.2 Specific Objectives**

1. To identify the relationship between using of e-commerce banking services and customer Satisfaction in CBE.

2. To determine e-commerce banking service dimensions that has effect on customer satisfaction.
3. To identify the possibilities of E-commerce banking services to improvement customer satisfaction.
4. To find out the problems in e-commerce banking activities to satisfy the customers

### **1.5 Research Hypothesis**

H1: Reliability of E-commerce Banking service has no significant and positive effect on customer satisfaction.

H2: customer awareness has no significant and positive effect on customer satisfaction.

H3: Responsiveness of e- commerce has no significant and positive effect on customer satisfaction.

H4: Empathy has no significant and positive effect on customer satisfaction.

H5: Security has no significant and positive effect on customer satisfaction.

### **1.6 Definition of terms**

#### **I. Customer**

A customer is a person or company that receives, consumes or buys a product or service and can choose between different goods and suppliers. The main goal of all commercial enterprises is to attract customers or clients, and make them purchase what they have on sale. They also try to encourage them to keep coming back. At the core of marketing is having a good understanding of what the customer needs and values (Adebayo, 2013).

#### **II. Customer satisfaction**

In simple words, customer satisfaction is a measurement that determines how well a company's products or services meet customer expectations. It's one of the most important indicators of purchase intentions and customer loyalty. As such, it helps predict business growth and revenue. Rigopoulou et al. (2008)

### **1.7 Significance of the study**

This study examines the effect of e- commerce banking services provided by CBE on customer satisfaction. It tries to identify the strengths and weaknesses of the e- commerce service (focus on the mobile banking and Internet banking services) delivered by the commercial Bank and its effect on customer satisfaction. The significance of the study will be to give sufficient information on the e- commerce banking service the CBE is currently providing and support it to know areas which need improvement and plan towards it so that its customers enjoy quality

service. It also allows the stake holders to have awareness on where the Bank positions in the eyes of its customer.

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

There are a number of commercial banks operating in the Ethiopia banking sector. However, this study will conduct on CBE Megnagna district only. The scope of the study is restricted only to e-commerce banking customer satisfaction that is using mobile banking and internet banking, and it does not include services like ATM, POS, cbeBirr and others.

### **1.9 Limitation of the Study**

The study focuses on commercial bank of Ethiopia about the effect of e-commerce banking services on customer satisfaction, it may be challenging to refer the finding of the study for the total the bank districts and other banks working in the country. The study not include all the e-commerce products service offered in CBE is one of the limitations. The other limitation of the study relates to the sampling procedure i.e. convenience sampling, which limits the generalize ability of the research findings. Finally, there are many other factors which can influence customer satisfaction in using e banking that do not include in this study. Future research is, therefore, recommended to address the above stated limitations.

### **1.10 Organization of the Study**

This research paper will structured in to five chapters. The first chapter starts by giving a brief introduction on e-commerce, service quality, and background information about CBE on customer's satisfaction and followed by a brief statement of the problem. It also includes the objectives, research question and hypothesis, significance of the study, as well as the scope and limitation of the study. The second chapter will focus on exploring various literatures on the problem under study to provide definitions to the several concepts as well as describe the theoretical viewpoints and conceptual framework. The third chapter presents the methodology of the study. It covers research design, data type and source, sampling technique and size, data collection techniques method of data collection and analysis methods of the study. Chapter four includes analysis of data and findings and the last chapter is chapter five includes conclusion and recommendations of the researcher

## **CHAPTER TWO**

### **2. LITERATURE REVIEW**

This chapter tries to discuss the theoretical and empirical issues of e-commerce and specifically in bank industry. This chapter includes history of e-commerce banking services globally and locally customer satisfaction, service quality (SERVQUAL) model, relation between customer satisfaction and service quality, relationship between E-commerce Banking and customer satisfaction, empirical review and conceptual framework .

#### **2.1. Theoretical Issues**

##### **2.1.1 Customer**

A customer is a person who maintains an account with the bank. One view of this question is that a person does not become a bank customer unless and until he opens an account with a bank (Adebayo, 2013). Based on this study, customer is defined as any person who seeks for banking services or products from the commercial banks.

##### **2.1.2 Customer Satisfaction**

Customer satisfaction is measured at the individual level, but it is almost always reported at an aggregate level. Customer satisfaction is an ambiguous and abstract concept and the actual manifestation of the state of satisfaction will vary from person to person and product/service to product/service. The state of satisfaction depends on a number of both psychological and physical variables which correlate with satisfaction behaviors such as return and recommend rate. The level of satisfaction can also vary depending on other options the customer may have and other products against which the customer can compare the organization's products (David, 2010).

Disappointment resulting from comparing a product's perceived performance or outcome in relation to his or her expectations (Musiime and Biyaki, 2010). Based on this study, customer satisfaction will be defined as the measure of how a product or service given to a customer meets the expectations of that particular customer

##### **2.1.3 Definition of e-commerce**

E-commerce is the activity of buying or selling of products on online services or over the Internet. Electronic commerce draws on technologies such as mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic.

E-commerce is powered by the internet. Customers access an online store to browse through and place orders for products or services via their own devices. (Kamrul, 2009).

#### **2.1.4 E-commerce definition in bank industry**

E-commerce banking service is a form of banking service where funds are transferred through an exchange of electronic signal between financial organizations, rather than exchange of cash, checks, or other negotiable instruments (Kamrul 2009). Daniel (1999) defines E-commerce banking as the delivery of banks' information and services by banks to customers through different delivery channels that can be used with different electronic devices such as computer and a mobile phone with browser software, telephone or digital television. Magemhe et al. (2002) also defined E-commerce banking is nothing but e-business in banking industry. E-commerce banking is a generic term for delivery of banking services and products through electronic channels, such as the telephone, the internet, the cell phone, etc

E-commerce banking, also known as automated funds transfer (EFT), is simply the use of electronic means to transfer funds directly from one account to another, rather than by check or cash (Malak 2007). The term of E-commerce often refers to online banking/Internet banking which is the use of the Internet as a remote delivery channel for banking services (Furst & Nolle 2002, p.5). With the help of the internet, banking is no longer bound to time or geography. Consumers all over the world have relatively easy access to their accounts 24 hours per day, seven days a week.

#### **2.1.5 Types of e-commerce in bank industry**

E-commerce can be also defined as a variety of platforms such as internet banking or (online banking), TV-based banking, mobile phone banking, and PC (personal computer) banking (or offline banking) whereby customers access these services using an intelligent electronic device, like PC, personal digital assistant (PDA), automated teller machine (ATM), point of sale (POS), kiosk, or touch tone telephone (Alagheband 2006, p.11). Different forms of E-commerce banking system were discussed as follows.

1. **Automated Teller Machines (ATM)** – ATM is a machine where cash withdraw can be made over the machine without going in to the banking hall. It also sells recharge cards and transfer funds, it can be assessed 24 hours/7 days with account balance enquiry (Fenuga, 2010). According to Love rock (2011), Automated Teller Machines (ATM) reduces the workload of bank's staff – ATMs decrease the work pressure on bank's staff and avoid queues in bank

premises. The customer can obtain exact amount. There is no human error as far as ATMs are concerned. Using ATM, a customer can withdraw cash up to a certain limit during any time of the day or night. ATM is an electronic service that provides a 24 hours 'service to customers.

**2. Point-of-Sale Transfer Terminals (POS)** – Point of Sale (POS) also sometimes referred to as Point of Purchase (POP) checkout is the location where a transaction occurs. A “checkout” refers to a POS terminal or more generally to the hardware and software used for checkouts, the equivalent of an electronic cash register. A POS terminal manages the selling process by a sales person accessible interface. The same system allows the creation and printing of the receipt (Shittu, 2010)

**3. Internet / extranet banking-** It is an electronic home banking system using web technology in which Bank customers are able to conduct their business transactions with the bank through personal computers. Arunachalam and Sivasubramanian (2007). Internet banking is conducted by completing bank transactions by directly accessing the bank using internet. Nowadays, internet banking customers can access many different services online, which makes physical banks open even after office hours. Internet banking allows customers of a financial institution to conduct financial transactions on a secure website operated by the institution. Internet banking can be conducted either by accessing the internet with a computer or by using a phone that has internet features (Alabar & Timothy, 2012).

**4. Mobile banking-** Tiwari et al. (2007) state that Mobile banking is a term used for performing balance checks, account transactions, payments credit applications and other banking transactions through a mobile device such as a mobile phone or personal digital assistant (PDA). Mobile banking is a service that facilitates to customers to conduct some banking services such as account inquiry and funds transfer, by using of short text message (SMS). The scope of offered services may include facilities to conduct bank and stock market transactions, to administrate accounts and to access customized information. In the study by Fikerselassie (2017) Mobile banking is a system or platform in which customers are automatically updated on any changes in their account.

**5. CBE Birr:** CBE Birr is a mobile banking services streamed by Commercial Bank of Ethiopia through banking agents. The bank selects trains and authorizes agents to provide banking services on behalf of the bank through a mobile phone. CBE Birr (Wallet Account) account is a type of pre-paid account in which a user can store his/her money for any future transaction.

Account is protected with a PIN. With the help of a CBE Birr, one can make payments for groceries, online purchases, and flight tickets, among others. A CBE Birr customer can deposit, withdraw, transfer money, make payments, buy mobile airtime and pay bill using a mobile phone in a very simple and convenient way ([www.combanketh.et/CBE](http://www.combanketh.et/CBE)).

### **2.1.6 E-commerce in Ethiopian Banking Industry**

Certainly, the banking industry in Ethiopia is underdeveloped and therefore there is an all immediate need to embark on capacity building arrangements and modernize the banking system by employing the state- of-the-art technology being used anywhere in the world. With a growing number of import-export businesses, and increased international trades and international relations, the current banking system is short of providing efficient and dependable services and therefore all banks operating in Ethiopia should recognize the need for introducing E-banking system to satisfy their customers and meet the requirements of rapidly expanding domestic and international trades, and increasing international banking services (Gardachew, 2010).

The appearance of E-commerce banking services in Ethiopia goes back to the late 2001, when CBE introduced the service for local users with its eight ATMs located in Addis Ababa. Then after Dashin bank comes to the picture in the year 2006 with its ATMs that provide service for local Dashen Visa Card holders and international Visa Cardholders coming to Ethiopia. United Bank S.C is the first to introduce tele-banking, including text messages or SMS by the end of 2008. Then, United Bank starts to deliver E-banking services like ATM, internet, mobile and agent banking (Abebe, 2016).

The first ever E-commerce banking gateway was signed between Ethiopian Commodity Exchange (ECX) and Dashen Bank and CBE. The E-banking system being developed with both banks is designed to give a secure electronic data sharing gateway between clients, banks and ECX, facilitating a smooth transaction. As the CBE continues to move at a snail's pace in its turnkey solution for Card Based Payment System, Dashen Bank remains so far, the sole player in the field of E-banking since 2006. The agreements signed by other private banks to introduce e-banking are welcoming (Gardachew, 2010).

At the end of June 2009, Dashen bank has installed more than 40 ATMs in its area branches, university compounds, shopping malls, restaurants and hotels. In the year 2011 the payment card services have witnessed significant strides, Dashen's ATM service expanded to 70 and 704 POS terminals (Annual report of the bank 2011).

### **2.1.7 Challenges of E-commerce**

E-commerce in banking is the wave of future; it offers various benefits to consumers in terms of easy and costs transactions but it also poses new challenges for country authorities in regulation and supervisions of the financial system and designing and implementing macroeconomic policy. One of the main trending challenges in e-banking is money frauds. Reports show frauds and forgeries in some of the Tanzania commercial banks and more on telephone banking are increasing daily. These issues basically defeat the key ingredients of information technology, which includes confidentiality, integrity and availability. Chronic unemployment among graduates and the widening gap between the few rich and the many poor is another challenge. One key issue here borders on how to handle the rising level of frauds and forgery prevalent in the entire banking system; and how to make Internet banking fit well in the banking structure of a country so notoriously identifiable with criminals use Internet access (George, 2011).

### **2.1.8 Challenges & Opportunities of E-commerce banking on Customer Satisfaction**

Kumari Nidhi (2016) listed the following challenges and opportunities regarding electronic banking operation.

**Security Risk:** Security of transactions is one of the most important issues in internet banking. Responding the security issues preserve computing resources against abuse and unauthorized use, and to protect data from accidental and deliberate damage, disclosure and modification. Security risk arises on account of unauthorized access to a bank's critical information base. A breach of security could result in direct financial loss to the bank.

**The Trust Factor:** Trust is the major obstacle to online banking for most of the customers. Conventional banking is chosen by the customers because of lack of trust on the online security. They have a perception that online transaction is risky due to which frauds can take place. While using e-commerce services a lot of questions arise in the mind of customers such as: Did transaction go through? Did I push the transfer button once or twice? Trust is among the significant factors which influence the customers' willingness to engage in a transaction with web merchants.

**Customer Awareness:** Awareness among consumers about the e-commerce services and procedures is still at lower side in Indian scenario. Banks are not able to disseminate proper information about the use, benefits and facility of internet banking. Less awareness of new

technologies and their benefits is among one of the most ranked barrier in the development of e-commerce services in bank.

**Availability of Personnel services:** In present-day times, banks are to provide several services like social banking with financial possibilities, selective up gradation, computerization and innovative mechanization, better customer services, effective managerial culture, internal supervision and control, adequate profitability, strong organization culture etc. Therefore, banks must be able to provide complete personnel service to the customers who come with expectations.

**Application of global technology:** There is a need to have an acceptable level of infrastructure and human capacity building before the developing countries can adopt global technology for their local desires. In developing countries, many consumers either do not trust or do not access to the necessary infrastructure to be able to process e-payments.

**Non- Performing Assets (NPA):** Nonperforming assets are another challenge to the banking sector. Vehicle loans and unsecured loans increases N.P.A. which terms 50% of banks retail portfolio was also hit due to upward movement in interest rates, restrictions on collection practices and soaring real estate prices.

**Competition:** The nationalized banks and commercial banks have the competition from foreign and new private sector banks. Competition in banking sector brings various challenges before the banks such as product positioning, innovative ideas and channels, new market trends, cross selling ad at managerial and organizational part this system needs to be manage, assets and contain risk. Banks are restricting their administrative folio by converting manpower into machine power i.e. banks are decreasing manual powers and getting maximum work done through machine power. Skilled and specialized man power is to be utilized and result oriented targeted staff will be appointed.

**Handling Technology:** Developing or acquiring the right technology, deploying it optimally and then leveraging it to the maximum extent is essential to achieve and maintain high service and efficiency standards while remaining cost effective and delivering sustainable return to shareholders. Early adopters of technology acquire significant competitive advances Managing technology is therefore, a key challenge for the Indian banking sector.

### **2.1.10 Opportunities of E-commerce**

**Available Rural Markets:** most of the total population in Ethiopia is a mainly untapped market for banking sector. In all urban areas banking services entered but only few big villages have the banks entered.

**Multiple Channels:** Banks can offer so many channels to access their banking and other services such as ATM, Local branches, Telephone/mobile banking, video banking etc. to increase the banking business.

**Competitive Advantage:** The benefit of adopting e-commerce banking offers a competitive advantage to the banks over other competitors. The execution of e-commerce in bank is beneficial for bank in many ways as it reduces cost to banks, improves customer relation, increases the geographical reach of the bank, etc. The benefits of e-commerce have become opportunities for the banks to manage their banking business in a better way.

**Worthy Customer Service:** Worthy customer services are the best brand ambassador for any bank for growing its business. Every engagement with customer is an opportunity to develop a customer faith in the bank. While increasing competition customer services has become the backbone for judging the performance of banks.

**Retail Lending:** Recently banks have adopted customer segmentation which has helped in customizing their product folios well. Thus retail lending has become a focus area particularly in respect of financing of consumer durables, housing, automobiles etc., Retail lending has also helped in risks dispersal and in enhancing the earnings of banks with better recovery rates.

### **2.1.11 Service Quality Dimensions & Customer Satisfaction in Using E-commerce services**

According to Lai et al. (2000), electronic commerce is integrated into all dimensions of businesses. One dimension of e-commerce is using in banking industry. Electronic banking (e-commerce services) is used everywhere now a day. Electronic banking accelerates the banking industry to gauge competitive advantage over the traditional banks. E-banks can provide efficient, reliable, secure and cost effective services to the users, such as online payment, online account information and online transaction.

This research paper is designed to find out the factors that influence the perception of the customers about the use of mobile banking. Questionnaire method was used to check the behavior of respondents. A sample of 148 respondents was surveyed which showed that all the environmental, organizational and globalization factors will affect the customer satisfaction with

e-commerce services. The results of the survey showed that mobile banking has more eye-catching influence on the customers using mobile banking and those who are using mobile banking are more likely to use the mobile banking more frequently. Because the degree of penetration of technology in the customer is very fast that they think mobile banking is the blessing of technology. It makes their work very easy and they embraced it quickly.

E-commerce services in bank sector are a single click between the customer and the bank (Bello, 2005). It provides the customer with rapid growth and much better results than human teller system. It allows the customers not to visit the bank regularly because it is very difficult for the business personnel to come to the bank for their transactions each day. Studies have shown that E-commerce services leave a positive impact on the customers. It was observed that the service quality in manually operated organizations was not as good as they were seen in fully automated organizations.

According to Yap et al. (2009), traditional banking system provides a way to the internet banking system and helps the customer to build their trust in the e-commerce based banking services. It is observed that the size and the reputation of the bank can only provide the structural assurance to the customers if the traditional banking system is present. Those customers who lack the knowledge of internet banking mostly rely on the staff of the banks to guide them about the features of internet banking, help them to make an e-banking account and password, resolve the problems of e-commerce based banking website and provides clarifications to the issues related to e-banking services. Such services can only be provided at the counter if the customers feel hesitation of adopting new system. The factor of trust is very important for making the customer more attractive towards it. Management should make such policies that can build the trust among the employees. It is observed that the promoting activities play a more important role in grabbing the attention of the customers.

Delightful service packages, cost effectiveness and speediness enhance the satisfaction of the customers towards internet banking. Customers perceive that the good services they receive at the counter is indicative of the services they are going to get online. So building the trust among the customers requires better management strategies.

Dimitriadis, Kouremenos, and Kyrezis (2010) have carried out similar research on consumer's perception. They identified the trust as an important variable in categorizing and predicting the behavior of customers in self-service technology. In this study trust is recognized as

segmentation variable. They are very keen to observe the impact of trust in two banking channels i.e. internet banking and phone banking. The main purpose of this study is to examine factors that differentiate high SST trustors and low SST trustors and to find out whether these levels are consequential in terms of willingness to use SSTs or not. Data, collected through interviews with executives of participating banks, have shown that only half of the customers are using internet banking and one third are using phone banking. They surveyed 762 real bank customers and used discriminant analysis to test the variables differentiating the customers having high and low level of trust in internet and phone banking. Discriminant analysis has shown that the difference in the level of trust is due to attitudinal, behavioral and psychological criteria. It is also categorized that the consumers from different level of trust react different in term if their intention to use SSTs. It has shown that trust based segmentation is very helpful in predicting the behavioral responses towards SST services.

Proenca and Rodrigues (2011) have newly conducted a research on self-service technology used in banking industry. Banks have passionately accepted self-service technology i.e. Internet banking, Phone banking and Automated teller machines so that clients can independently operate banks services without any interaction with bank employees. The use of this study is to evaluate the demographic behaviors of users and non-users of self-service technologies in banking services. Data were collected through telephonic survey. Interview of 300 respondents was carried out based on adult population in terms of age, gender, and geographical places. Six variables of customer performance have recognized for research purpose i.e. Satisfaction, Tendency to complain, Compassion to price, Tendency to change providers, Word of mouth and Intention to repurchase.

The study discovered that there is major relationship between self-service technologies and demographic variables. It is found that those who are the satisfied with their banks exhibit positive word of mouth, greater intention to repurchase, less tendency to price, fewer tendency to change banks and a greater propensity to complain. But the users of SSTs have greater tendency to price and complains. This study has not identified a significant positive relation between SSTs and the consumer behavior dimensions but it has shown that customers loyalty with banking service in terms to SSTs have significantly heighten the profits of the firm, lowered the cost, increases the level of purchases, less price sensitivity and positive word of mouth.

### **2.1.12 The relation between Service Quality & Customer Satisfaction**

In the era of stiff competition of the banking industry, both private and state banks are in the game of market arena in terms of providing service quality in every aspect of their competitive strategies because the awareness of their customers are developed in selecting whose bank provides better quality of services as per the satisfaction level they expected to achieve so that different banks designed winning strategies of rendering best service quality to enhance their customer satisfaction over existing competitors in the market rivalry. The relationship between expectation, perceived service quality and customers satisfaction have been investigated in a number of researches (Zeithaml, et al, 1988). They found that, there is very strong relationship between quality of service and customer satisfaction (Parasuraman et al, 1985; 1988). Increase in service quality of the banks can satisfy and develop attitudinal loyalty which ultimately retains valued customers (Nadiri, et al 2009). The higher level of perceived service quality results in increased customer satisfaction. When perceived service quality is less than expected service quality customer will be dissatisfied (Jainand Gupta, 2004).

According to Cronin and Taylor (1992) satisfaction super ordinate to quality that quality is one of the service dimensions factored in to customer satisfaction judgment Parasuraman et al. (1985) and Zeithaml et., al (1990) noted that the key strategy for the success and survival of any business institution is the deliverance of quality services to customers. The quality of services offered will determine customer satisfaction and attitudinal loyalty (Ravichandran et al. 2010). Research has indicated that service quality has been increasingly recognized as a critical factor in the success of any business (Parasuraman et al., 1988), and the banking industry in this case is not exceptional.

Parasuraman, A., Zeithaml, V.A., & Berry, L.L. (1988) found that the performance of the service provider on core and relational dimensions of services was an important driver for customer satisfaction in retail banking. Service quality has been widely used to evaluate the performance of banking services (Cowling & Newman, 1995). The banks understand that customers will be loyal if they provide greater value (quality services) than their competitors (Dawes & Swailes, 1999), and on other hand, banks can only earn high profits if they are able to position themselves better than competitor within specific market (Davies et al., 1995). There is positive linear relationship between the service quality and customer satisfaction. Consequently, banks need to

focus on service quality and customer satisfaction as a core competitive strategy (Chaoprasert & Elsey, 2004).

### **2.1.13 Service Quality Dimensions (Service Quality Model)**

Service quality has been defined as the difference between a customer's expectation of a service and his/her perception of the service's performance. SERVQUAL stands for service quality and is a service quality measuring tool or model that is used to measure the gap between customer expectation and experience. When expectations are not met, customers tend to get dissatisfied with the quality of satisfied and further still when expectation are exceeded, the quality of service is perceived to be exceptional (Simon, 2016).

The SERVQUAL model of Parasuraman et al. (1988) proposed a five dimensional construct of perceived service quality tangibles, reliability, responsiveness, assurance and empathy as the instruments for measuring service quality (Parasuraman et al., 1988; Zeithaml et al., 1990). Therefore in this study SERVQUAL model is used to measure to service quality of electronic banking provided by selected banks towards their customer satisfaction.

#### **Reliability**

The dependability and accuracy of the service provider regarding with delivery, service provision, problem resolution and pricing.. Reliability means honoring the commitments in areas such as billing accuracy, proper record maintenance and delivering the service within acceptable time limit. It refers to the correct technical functioning of a self-services technology and the accuracy of service delivery. Many authors have detected that reliability is significant in the determination of service quality (Bagozzi, 1990; Davis et al., 1992; Parasuraman et al., 1988 Zeithaml & Bitner, 2000). And reliability is the most crucial characteristics for customers in the evaluation of service quality. Zeithaml and Bitner(2000) advised that customers should be specifically influenced by the reliability of new technology because they might be associated with risks such as the technology mal functioning .Parasuraman et al. (1988)

#### **Consumer Awareness**

Consumer Awareness is a demonstration of ensuring the purchaser or buyer knows about the data and information about items, products, administrations, and buyers' privileges. Consumer awareness is significant with the goal that purchasers can settle on the best choice and settle on the ideal decision. Shoppers reserve the privilege to data or information, the option to pick, right to wellbeing Parasuraman et al. (1985).

### **Responsiveness**

The ability to know and willingness to cater to customer needs or the ability to respond customer request, questions, complaints and problems. Customers are particularly interested in the speed with which a service is offered or delivered (Bateson, 1985).

### **Empathy**

Parasuraman et al. (1985) defined empathy as the caring and individual attention the firm provides its customers. It involves giving customers individual attention and employees who understand the needs of their customers and convenience business hours. Ananth et al. (2011) define empathy ability of the staff to provide a caring service to customers through quality services, skillfully handling of conflicts and efficient delivery of services resulted in satisfied customers for long term benefits.

### **Service Security**

Security is defined as the freedom from danger, risk, or doubt. It involves physical safety, financial security and confidentiality. It consists of employees who instill confidence in customers, making customers feel safe in their transactions, employees who are consistently courteous and employees who have the knowledge to answer customer question (Parasuraman, Zeithaml & Berry, 1985). Moreover, security is defined as personal and possessions safety of the customers. It also includes confidentiality maintained by service providers (Johnston, 1997).

## **2.2 Empirical Reviews**

Many related studies were conducted by different researchers in different countries. Nevertheless, there are limited numbers of studies were conducted in Ethiopia on the effect of e-commerce banking customer satisfaction. Some of the study includes.

The descriptive case study analysis conducted by Khalfan et al (2006) on ‘Factors influencing the adoption of internet banking in Oman, aimed to identify the main potential factors or impediments that are currently inhibiting the incorporation or adoption of E-commerce applications in the Omani Banking sector. Data, used in their study were collected using semi structured interviews and survey questionnaire as well as reviewing some bank documents. The results of their study provide a Pragmatic picture about the adoption of E-Commerce applications in the core financial sector domain of Oman.

The study conducted by Nepal et al., (2013), used data from five banks and 60 customers to analyze electronic banking. They find out that though the majority of the sampled customers of

the banks use the internet generally and have knowledge about electronic banking, they had not developed completely the attitude to make use of the internet banking facility. Khatri and Upadhyay (2013) point out that, the under-utilization of electronic banking in the country is a result of inadequate awareness and the fear of security. Poor internet infrastructural development in the country was also cited as the major challenge of electronic banking in the country.

Ahmed and Hassan (2011) conducted a study on e-banking functionality outcomes of customer satisfaction in Jordan. The study used empirical analysis on customer satisfaction, loyalty, and positive word of mouth. In using purposive sampling, they selected 179 customers from 24 commercial banks. The study found positive effect of electronic banking on customer satisfaction, loyalty.

(Gardachew, 2010) which is conducted a research on the opportunities and challenges of e-banking in Ethiopia. The study was focused on analyzing the status of electronic banking in Ethiopia and investigates the main challenges and opportunities of implementing e-banking system. There was an article on Birritu magazine No.119 which was published in February 2015. A study entitled with the challenges and opportunities of e-payments in Ethiopia; found that, the main obstacles to the development of e-payments are lack of customers trust in the initiatives, unavailability of payment laws and regulations particularly for e-payment, lack of skilled manpower and frequent power disruption (Wondwossen&Tsegai, 2005). According to the study, inadequate legal structure and security framework could foster the use of e-payments, which is contradicting with the finding of the previous study. The study came up with the challenges such as insufficient power supply, insufficient critical technological infrastructures; lack of socio-cultural support and inadequate legal framework that are required to operate seamless and effective electronic payment system

Abenet (2010) has tried to study the relationship between customer educational level and e-banking usage. His study revealed that e-banking usage practice is greater among those peoples who are in a better educational level as compared to others, so educational level has positive impact on e-banking adoption. This finding is in line with Edwin et al. (2014) who found that the level of education of consumers and their ICT knowledge impacts their acceptance of e-commerce banking services. The study made use of respondents that are ICT literate and who use it in their everyday transactions, which shows a fair amount of ICT knowledge.

In two private banks in Gonder city, (Milion, 2013) conducted a report on the Effect of Electronic Banking on Customer Satisfaction. The researcher employed both descriptive and explanatory statistics in analyzing the data. The results of the study implied that majority of users of e-banking are the young, the educated, salaried and students but business men and women are not actively using the service. The finding also shows e-banking has impact in improving customer satisfaction by reducing waiting time for customers to get bank service and enable them to control their account movements.

A study conducted by Yitbarek, (Yitbarek, 2015) indicated that service quality dimensions ‘reliability, customer support and ease of use have strong influence on electronic banking users in both private and state-owned banks. And the findings showed that the major problem faced by commercial banks in relation to electronic banking is interruption of network due to poor ICT infrastructure, shortage of sustainable electric power supply, lack of ICT knowledge from customer end.

Wondwossen and Tsegai (2005) also studied on the challenges and opportunities of E-payments in Ethiopia; their objective was studying of E-payment practices in developing countries, Africa and Ethiopia. The authors employs interview and on site observation to investigate challenges to E-payment in Ethiopia and found that, the main obstacles to the development of E-payments are, lack of customers trust in the initiatives, Unavailability of payment laws and regulations particularly for E-payment, Lack of skilled manpower and Frequent power disruption.

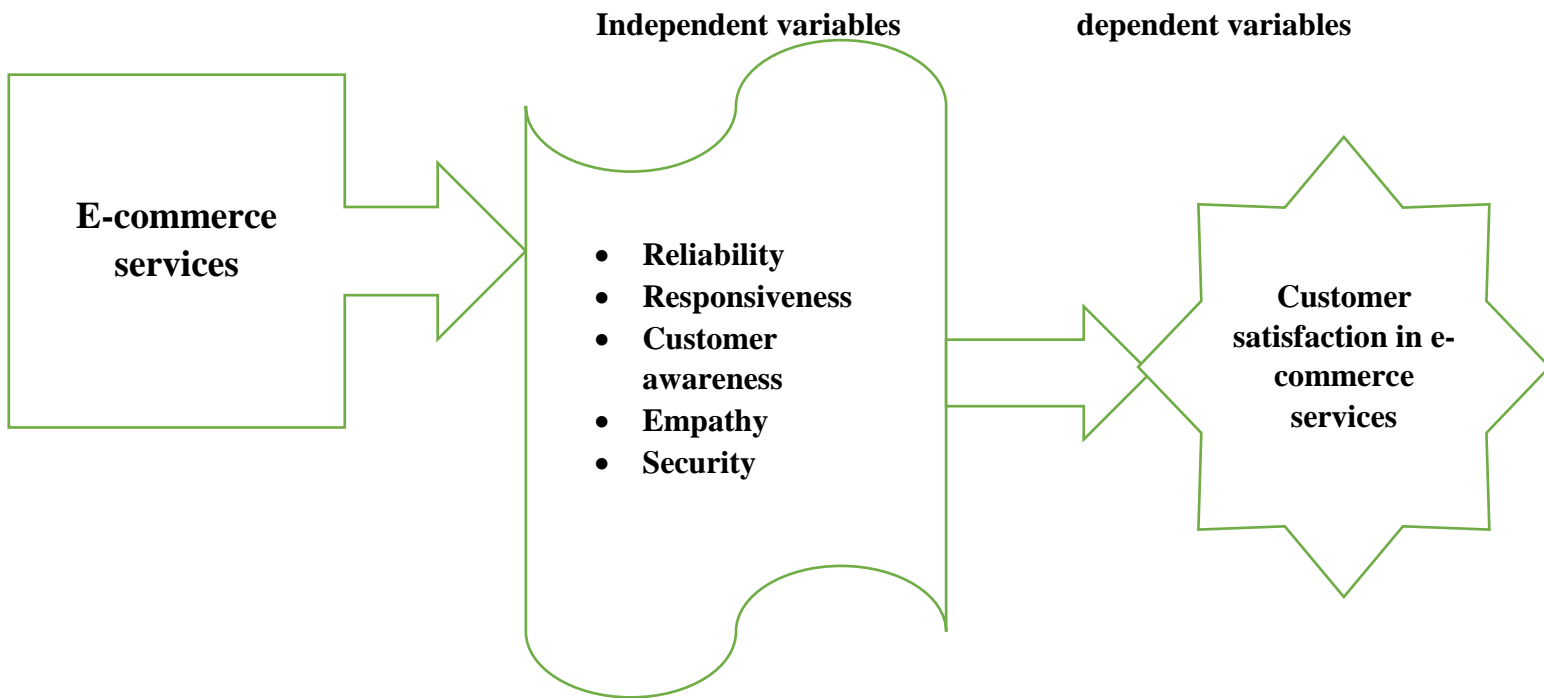
### **2.3 Conceptual Framework**

Conceptual research framework constitutes of a researcher’s combination of previous researches and associated work and explains the occurring phenomenon. The conceptual framework of this study, design based on review literatures and postulated the impact of mobile banking service on customer satisfaction. The conceptual framework of the study shows that how the SERVQUAL dimensions: Reliability, Responsiveness, customer awareness, security and Empathy variables of the study have effect on the Customer satisfaction. The independent variables are the SERVQUAL dimensions whereas customer satisfaction is the dependent variable. The five SERVQUAL model has originally developed by Parasuraman et al. (1988).

Following from the literature review done above, the relationship between service quality variables and customer satisfaction can be shown as following. In this conceptual model the five Service quality dimensions have been selected from the study conducted by Parasuraman et al.,

(1988). Parasuraman et al., (1985) conducted research on different service organization (Bank, Hotel, Electrical Corporation, Hospital, Transportation) by using ten service quality dimensions (tangibility, reliability, responsiveness, communication, access, competence, courtesy, credibility, security, and knowledge). Later Parasuraman et al., (1985) conducted research and then the ten dimensions were further purified and developed into five dimensions (reliability, responsiveness, customer’s awareness, security and empathy). The reason behind purified the ten dimensions into five dimensions was the appropriateness of each service quality dimensions to different service organizations for example security dimension is appropriate for transportation, credibility dimension is appropriate for hotel.

Therefore, in this study convinced me to use Parasuraman et al., (1988) ‘s model.



**Fig 2.1** Conceptual framework on the effect of e-commerce products on the customer satisfaction.

Source: Parasuraman et al., (1988)

## CHAPTER 3

### 3. RESEARCH DESIGN AND METHODS

This chapter presents the research methodology and design. Many researchers have written extensively on research methodology. The research methodology helps in explaining how the study has been done and how the research problem has been defined. Eldabi (2002) suggested that a series of steps as a research paradigm to be followed in a methodology part of a research. Methodologies cannot be true or false, only more or less useful (Silverman, 2001). Nachamias et al. (1996) for instance states that methodologies are considered to be systems of explicit rules and produced. Not only that but also it helps in explaining what data have been collected and which methods have been used and why the technique of analyzing the data has been selected. Kothari (2009), suggested the contents of research methodology to contain: the research design, area of study (coverage), sample and sampling techniques, methods for data collection, and techniques for data analysis. Given this, this study adopted the above outline as a framework for the presentation of this chapter.

#### 3.1 Research Approach

Research approach is selected by researcher(s) based on the research purpose, the nature of the research, the problem area, and research questions (Alhamdani et al. 2006). The research approach in this study is chosen based on the purpose and the research questions set out to be addressed. According to Creswell (2003, p.13-15)

The study follows both qualitative and quantitative research as a research approach to describe the current effect of e-commerce products on customer satisfaction: the case of commercial bank of Ethiopia, Megegnagna District. Mixed research approach enables to use multiple methods of data collection and helps to generate reliable findings.

According to John (2003) states that mixed method research include quantitative and qualitative methods that are the major approaches being used today in the social and human science with their advantages and disadvantages. Employing mixed approach helped the study to neutralize biases of applying any of a single approach as well as ways to balance the weaknesses inherent in a single method with the strengths of the other method.

In order to achieve the objective of this study and answer the research questions researcher will be used both qualitative and quantitative research approach to assess the main effect of E-commerce services (mobile banking and internet banking) on customer satisfaction in CBE megenagna district and explore the basic challenges which hinder the practice of E-commerce service (mobile banking and internet banking) service on the customers satisfaction in CBE to converge across qualitative and quantitative methods (triangulating data sources). This research approach pose the researcher to the challenges that need for extensive data collection, the time-intensive nature of analyzing both text and numeric data, and the requirement for the researcher to be familiar with both quantitative and qualitative forms of research (Creswell, 2003; pp. 210).

#### **4.1 Research design**

In this study, both qualitative and quantitative approach were applied with 399 respondents. There are three types of academic researches depending on the problem area and the nature of the phenomenon that it studies. The purpose of the research can be Exploratory which deals with unknown problem, Descriptive in which there is an awareness of the problem and Explanatory, where the problem is clearly defined (Ahmed 2011)

Since objective of this study is to assess the effect of e-commerce services on customer satisfaction: the case of commercial bank of Ethiopia, Megenagna District, descriptive and explanatory type of research design is more appropriate. The study chooses the descriptive and explanatory design because the nature of the designs is helpful in describing the recent situation of the e-commerce banking services effect on customer satisfaction in detail and inferential statistics help to show the direction and magnitude of the relationship.

This is Therefore; the research design of this study is both descriptive and explanatory type of research design.

#### **4.1 Population of the Study**

The banking industry in Ethiopia is overseen & controlled by the National bank of Ethiopia (NBE) acting as the central bank of the country. There are 21 commercial banks registered under the NBE up to December 2021, these comprises 2 state owned banks and 19 other private commercial banks. Commercial bank of Ethiopia is selected for this study.

Based on geographical locality CBE classified in to eight districts in Addis Ababa. The study focuses on Megenagna district found in the capital city of the Ethiopia, Addis Ababa. The targeted population for this study would be Megenagna district of CBE and branches under this

district will be the pool of the study. Megegnagna district has 58 branches (Dec 2021 Megegnagna District report) and 17% (10 branches) of the total branches will only focus of this study.

This percentage is chosen because Mugenda (2003) also note that a sample size of 10%-30% of the target population for a social study is adequate for research. The target population includes branch manager's business managers, digital banking officers; bank officers recruit for the mobile banking service and customers using e-commerce services of the 10 branches.

#### **4.1 Sampling Technique and procedures**

To select participants to the study convenience sampling technique was used because it was not possible to get access to the list of E-banking customers to conduct probability sampling procedure. As a procedure, each respondent asked that whether he/she was the customers and the banking user of the selected branch before the questionnaire distribution. Convenience sampling is a non-probability sampling technique where subjects are selected because of their convenient accessibility and proximity to the researcher (Black et al, cited in Fikerselassie, 2017). Saunders et al. (2009)

The sample size used for this research is 399 respondents' branch managers, business managers, branch digital banking officers, employees and customers use e-commerce banking product of 10 selected CBE branches in Megegnagna District. The number of branches was limited to only 10 branches as the number of customers very high and e-commerce banking service offered in CBE is relatively homogenous. The branches used for the study were Tefera degife, Gurd shola, Beshale, semit, Tsehay mewcha, Weji,cmc Ayermenged, Semit 26ondominium, Figa Mazoryal, and Gara gedo.

#### **4.1 Sample Size**

A sample is a small group selected to present a population into the study. It is selected to represent the whole population with the same look future of population (Sight, 2007). The sample size for the study calculated according to the formula recommended by Yamane's (1967) with 95% confidence and 5% acceptable sampling error. Using the Slovin's Formula out of 198 bank officers and 121,012 customers using e-commerce products of the ten branches identify number of respondents.

#### **Slovin's Formula**

$$n = N / (1 + N \epsilon^2)$$

Where:

- n = Number of samples,
- N = Total population and
- e = Error tolerance level

$$n = N / (1 + Ne^2)$$

$$n = 121210 / (1 + 121210 * .05^2)$$

$$= 121210 / 304.025$$

$$= 398.68$$

Therefore the total participants are 399

### **3.6 Sources of Data**

The choice of particular method of collecting data depend on the purpose of collecting data, the information being collecting, the resource available for the research and the skill of the researcher (Kothari,2004). In order to achieve the condition objectives the data for this study is obtain from both primary and secondary source. The study use both primary and secondary data which obtained from primary and secondary data sources.

#### **3.6.1 Primary Data**

Primary data are helpful to get original information from the respondents to know their feelings, opinions, attributes and perceptions towards e-commerce on customer satisfaction. Therefore, primary data are collected from respondents (e-commerce-banking customers and CBE Staffs) which have direct participation in the e-commerce service by distributing questionnaires designed in the form of likert scale.

#### **3.6.2 Secondary Data**

Secondary data; such type of data involves different sorted data made, adjusted and field by a third party. As a result, annual report, audit report and research papers on similar topics shall be used as secondary sources of data to analyze the issue with the existing literatures.

### **3.7 Methods of Data Collection**

Both primary and secondary data were used in the study. In order to make the research constructive and to make the reader comprehend its outcomes, secondary data was used. Those also contributed towards the formation of back ground information and empirical reviews.

### **3.8 Methods of Data Analysis**

The research value is measured by the data analysis tools was applied to the study. The quantitative data collected through the survey questionnaire was encoded in to Statistical Package for Social Science (SPSS) version 26 software. Then descriptive statistics, correlation and regression analysis conducted on the data to identify the relationship between the model construct and to test the hypotheses. Finally, to evaluate the level of causal relationship between the constructs, variables that found to have significant correlations undertake through multiple regression analysis. The descriptive data analysis tools such as mean and standard deviation was used simply to describe the behavior data in terms how the effect of quality dimensions on the satisfaction customers on e-commerce services

### **3.9 Descriptive Analysis**

The descriptive statistical results are presented by tables, frequency distributions and percentages to give a condensed picture of the data. This was achieved through summary statistics, which includes the means, standard deviations values which are computed for each variable in this study.

### **3.10 Pearson Correlation Analysis**

In this study Pearson's correlation coefficient is used to determine the relationships between independent variables which is service quality dimensions (Reliability, Customer awareness, responsiveness, empathy and security) and dependent variable which is customer satisfaction.

### **3.11 Multiple Regression Analysis**

Multiple regression analysis is used to investigate the effect of service quality dimensions (Reliability, Customer awareness, responsiveness, empathy and security) on customer satisfaction.

### **3.12 Regression Functions**

The equation of multiple regressions on this study is generally built around two sets of variable, namely dependent variables (customer satisfaction) and independent variables (Reliability, Customer awareness, responsiveness, empathy and security). The basic objective of using regression equation on this study is to make the study more effective at describing, understanding, predicting, and controlling the stated variables.

### 3.13 Validity and Reliability

Validity and reliability are qualities that are essential to the effectiveness of any data gathering procedure. Validity refers the researcher's conclusion is true or correct with corresponds to the actual state of the world. Whereas, reliability indicates the accuracy or precision of the measuring instrument (Ghose, 2014). Cronbach's alpha measures the consistency of the participant's response to all the items in a questionnaire indicating the degree to which items that are independent measures of the same concept are correlated with each other (Ali, 2013). Reliability was measured using Cronbach's alpha and the minimum value that will set as acceptable is  $\geq 0.7$  (Ali, 2013).

### 3.14 The operationalize of Independent Variables and Dependent Variable

1. Reliability: the ability to perform the promised service dependably and accurately on time.
2. Customer awareness: Consumer Awareness is the process of making the consumer of goods and services aware of his rights.
3. Responsiveness: willingness to help customers and to provide prompt services.
4. Empathy: caring, individualized attention the firm provides its customer.
5. Security: Security is an essential part of any transaction that takes place over the internet.
6. Customer satisfaction: the customers 'post-purchase comparison between pre-purchase expectation and performance received.

The study measures the independent variable by using the SERVQUAL dimensions it used to measure the gap between customers' expectations for excellence and their perception of the actual service delivered. In order to improve service, you must understand customer satisfaction and customer expectations. This can be done by asking for feedback from your customers and the bank staff using a service quality questionnaire that is a 5 point likert scale questionnaires which distribute to the targeted respondents and parallel interview service providers direct related with e-commerce products .

### 3.15 Research model

$$CSEC = \beta_1 + \beta_2 Rel + \beta_3 Caw + \beta_4 Res + \beta_5 Emp + \beta_6 Sec + \varepsilon$$

Where CSEC = Customer Satisfaction in e-commerce products, Rel= Reliability, Caw = Customer awareness Res= Responsiveness, Emp= Empathy and Sec = Security are the explanatory variables (or the repressors)  $\beta_1$  is the intercept term- it gives the mean or average effect on Y of all the variables excluded from the equation, although its mechanical explanation

is the average value of customer satisfaction when the stated independent variables are set equal to zero.  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$ ,  $\beta_5$ , and  $\beta_6$  refer to the coefficient of their respective independent variable which measures the change in the mean value of customer satisfaction per unit change in their respective independent variables and  $\varepsilon$  is the error term.

### **3.16 Ethical Consideration**

During the study, ethical issues were considered to avoid conducting unethical research, to avoid the possible risk to people who participated in the research. Moreover, to avoid harm participants as per Bank internal policy, regulatory policies including consumer protection law. The researcher ensured respondents that all provide information remained confidential and is only be used for this study

## CHAPTER FOUR

### DATA PRESENTAION, ANALYSIS AND INTERPRETATION

This chapter shows the presentations and discussions of the findings obtained from the analysis. Both descriptive and explanatory techniques of data analysis are employed to see the characteristics of the sample, identify and discuss the relationship between dependent and independent variables.

#### 4.1 Response Rate

The study targeted a total number of 399 questionnaires distributed and 91% or 363 questionnaires were filled and returned with valid response. According to Patrick, B. (2003) the return or success rate 50% is 'adequate'; 60% response rate is 'good' and 70% rate or higher is 'very good'. This is therefore, the study uses 75% response rate is expecting and remaining 25% may be non-response rate, and sample size determined at 95% confidence level and margins of error at 5%. This is therefore, the study is going for further detail analysis after having got more than 70% response rate; therefore, the response rate is adequate for analysis and reporting with excellent response rate. The data was analyzed using SPSS version 26.

#### 4.2 Reliability Test Result

Reliability refers to the degree to which measures are free from random error, and therefore, yield consistent results (Zikmund 1997). The scales of the five variables were checked for internal consistency or reliability by applying reverse coding as appropriate and using Cronbach's Alpha in SPSS version 26.0. The results of the tests for each scale are shown in table 4.1. The responses of respondents were scored and the reliability of the tool was determined using Cronbach's Alpha. The questionnaire has a total of 34 questions as shown in the below table. The result indicates that the value of Cronbach's alpha equals to 0.7 proving that the scale is indeed reliable (Hair, 1992).

Table 4.1 reliability test result

S/No.	Variables	Number of items	Cronbach's Alpha
1	Reliability	7	.863
2	Customer awareness	6	.926
3	Responsiveness	10	.890

4	Empathy	6	.881
5	Security	5	.886
6	Customer satisfaction level	8	0.78

Source: Own Survey, May, 2022

### 4.3. Data Analysis

The researcher use two type of analysis technique which are descriptive analysis to interpret result from questionnaire using frequency table and figure by from result reflecting mean and standard deviation and inferential technique which is Correlation and regression analyses to check and understand the relationship and magnitude between dependent variable Customer satisfaction and independent variable e-commerce service quality respectively.

Descriptive statistics is the term given to the analysis of data that helps describe, show or summarize data in a meaningful way. Descriptive statistics are very important because if we simply presented the data it would be hard to visualize what the data was showing, especially if there was a lot of it. Descriptive statistics therefore enables us to present the data in a more meaningful way, which allows simpler interpretation of the data. Because, descriptive analysis is used to obtain existing facts regarding the effect of e-commerce products on customer satisfaction in CBE using five indicators of e-commerce services quality namely, Reliability, customer awareness, Responsiveness, empathy and security. This section presents the respondents' perception on the independent and dependent variable. The respondents were asked to indicate the extent to which they agreed and disagreed to statements relating to the variables under study on a five-point Likert scale (1=Strongly Disagree to 5= strongly agree). Standard deviation was used to indicate the variation or "dispersion" from the "average" (mean). A low standard deviation indicates that the data points tend to be very close to the mean, whereas high standard deviation indicates that the data is spread out over a large range of values.

### 4.4 Descriptive analysis

Descriptive analysis is a set of procedures for gathering, measuring, classifying, computing, describing, synthesizing, analyzing and interpreting systematically acquired quantitative data.

#### 4.4.1 Demographic Information

Demographic information, generally describe the characteristics of the respondent gender, age, educational background, income level, customer type, year of experience using the service,

frequency of using the service and types of e-commerce product used by customers were asked. The results obtained from the structured Questionnaires are present on the table below.

Table 4.2 Demographic Analysis

<b>Demographic character</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Gender</b>		
Male	206	56.7
Female	157	43.3
Total	363	100
<b>Age</b>		
18-30	254	70
31-40	68	19
41-50	30	8
Above 50	11	3
Total	363	100
<b>Educational Level</b>		
Less than secondary school	42	12
Secondary school completed	58	16
TVET/Diploma	105	29
BA/BSC	117	32
Masters and above	41	11
Total	363	100
<b>Income Level</b>		
Less Than 5,000 Birr	89	25
5,001-10,000 Birr	131	36
10,001- 50,000 Birr	78	21
50,001- 100,000 Birr	50	14
Above 100,000 Birr	15	4
Total	363	100
<b>Customer Type</b>		

CBE Employees	87	24
Individuals	246	67.8
Corporate	30	8.3
Total	363	100
<b>Service experience</b>		
Less than 2 years	285	78
2-5	64	18
Above 5 years	14	4
Total	363	100
<b>Frequency of using the services in the month</b>		
Less than 5 times	218	60.10
5-10	60	16.5
11-15	34	10.2
Above 15 times	48	3.2
Total	363	100

Source: Own survey (2022)

The result acquired from demographic characteristics of the respondents shows that 56.7% are males and the rest 43.3% are females this shows that e-commerce products is mostly choose by males than female. The majority of the respondents are or 70 % ( or 254) between the 18-30 year age interval. The second leading age group was the 31-40 age group, contain 19% or ( 68), follow by the 41-50 year age group with 8 % ( or 30) and 3%(11) of the respondents belongs to above 50 years. The result also shows 70 % of e- commerce product users age ranges from age 18–30 demonstrating that this banking channel is more preferred by the new generation societal groups. Respondent’s educational status shows: 12% (42) are Primary school finished; High school completed 16% (58) TVET/diploma holders 29% (105), Degree holders 32% (117) and masters and above has 11% (41).This indicates the diploma and degree holders are dominant users of e-commerce services. Income level of the respondents were observed as less than 5,000 birr 25% (89), 5,001-10,000 birr 31% (131), 10,001-50,000 birr 21% (78),50,000-100,000 birr 14% (50), above 100,000 birr 4% (15). The result shows most of the customers with income level 5,000-10,000 birr more use the e-commerce services.24% (87) respondents are staff of CBE, 67.8% (246) are individual (retail) and 8.3% (30) are corporate cutomers.78% (278) use

the services less than two years, 18% (64) have 2-5 years' experience in using the services and 4% (14) customers use the services above 5 years. This indicates most of the respondents are new users of e-commerce services.60.1% (218) respondents are use the service less than five times in one month,16.5%(60) respondents use the services 5-10 times in one month,10.2%& (34) respondents are use 11-15 times in the month and 3.2% (48) respondents use above 15 times in the month. This result indicates most of the respondents use the service less than five times in the month, and then the customers use traditional banking more of the e-commerce services.

**Table 4.3 Types of E-commerce services use by respondents**

service type	Frequency	Percent
Mobile banking	286	78.8
Internet banking	20	5.5
Both	57	15.7
Total	363	100

Source: Own survey (2022)

Types of E-Banking Regarding Types of E-commerce service users of Mobile Banking users are 78.8% (286), Internet Banking users are 5.5% (20) and 15.7%(57) use both mobile and internet banking services .The above result shows that customers highly use Mobile Banking only compared to Internet banking as well as both mobile and internet banking users, so the bank prefer to create awareness and training for their customer about internet-banking service to get benefit and to meet their aim making of cashless society.

#### **4.4.2 Descriptive Analysis of Service Quality Measurements**

Descriptive statistical analysis provided the mean and standard deviation for each variable in order to depict the level of agreement on E-commerce service quality and customers satisfaction dimensions. The mean and standard deviation were calculated for the interval scale of independent variables (Reliability, customer awareness Responsiveness, Empathy and Security) and dependent variables (Customer Satisfaction). The mean indicates to what extent the sample

group averagely agrees or does not agree with the different statements whereas standard deviation shows the variability of an observed response from a single sample

All the questions related with both the dependent and independent variables of this study were prepared by means of a Likert scale in the form of ordinal scale. But for the sake of simplicity of analysis the variables transformed into interval scale leading the researcher to obtain a single variable for the six constructs based on Al-Sayaad et al. (2006) which summarized as follows.

**Scaled Likert Criterion**

**Mean range Response Option**

- 1 to 1.80----- Strongly disagree
- 1.8 to 2.6----- Disagree
- 2.6 to 3.4----- Neutral
- 3.4 to 4.20----- Agree
- 4.2 to 5.00----- Strongly Agree

**Table 4.4 Respondent’s response on Reliability Dimension**

Reliability Dimension	N	Mean	Std. Deviation
E-commerce completes a task accurately	363	3.36	1.056
E-commerce deliver the service exactly as promise	363	3.68	0.853
The Bank give honest concern in answering my problems, related to e-commerce services transactions	363	3.7741	0.75706
E-commerce perform the service right at the first time	363	4.1680	0.68679
The Bank has modern-looking technical equipment for e-commerce banking services	363	4.4050	0.54487
I have not had complications with e-commerce banking services such as Internet banking and Mobile banking processes of this bank.	363	4.6281	0.48398
The e-commerce service supports in keeping	363	4.4766	0.71401

transaction records properly			
<b>Average Reliability Dimension</b>	363	<b>4.07</b>	<b>0.0728</b>

Source: Own Survey, 2022

The above result shows the level of agreements of the respondents towards E-commerce service on reliability dimension. The dimensions result was ranged from the lowest mean 3.36 (E-commerce completes a task accurately) to the highest mean 4.6281 (I have not had complications with e-commerce banking services such as Internet banking and Mobile banking processes of this bank.). Thus, the mediocre level of agreements of the respondents on reliability dimension scored **4.07** mean with 0.728 of standard deviation. This indicates that most of the respondents with agree response on the reliability of E-commerce service.

Table 4.5 Respondent's response on customer awareness Dimension

Customer awareness Dimension	N	Mean	Std. Deviation
Customers have high awareness on the e-commerce banking services benefits and challenges.	363	3.6061	1.00917
Is E commerce Reduce the long queue available banking hall	363	3.9477	0.79710
E-commerce banking products Improve customers satisfaction	363	4.1680	0.73723
E-commerce services Increase Speed and efficiency	363	4.3003	0.78358
E-commerce Increase reliability and accessibility	363	3.9697	0.81875
The culture of the society also affect the customers to use e-commerce banking product	363	4.0523	0.77603

easily			
<b>Average customer awareness Dimension</b>	363	4.007	0.8203

Source: Own Survey, 2022

The above result shows the level of agreements of the respondents towards E-commerce service on customer awareness dimension. The dimensions result was ranged from the lowest mean 3.6061(Customers have high awareness on the e-commerce banking services benefits and challenges.) to the highest mean4.3003 (E-commerce services Increase Speed and efficiency). Thus, the average level of agreements of the respondents on customer awareness dimension scored 4.007 mean with 0.8203 of standard deviation. This indicates that most of the respondents with average agree response on the customer awareness of E-commerce service.

Table 4.6 Respondent's response on Responsiveness Dimension

Responsiveness Dimension	N	Mean	Std. Deviation
Problem solving way of the service affect the satisfaction of the service	363	3.6915	0.96262
Response of service through e-commerce banking is very prompt and quick	363	4.0000	0.80400
The E-commerce products of the bank provides me with convenient options for reversing or adjusting transaction	363	4.1570	0.75445
Bank quickly respond to my requests on e-commerce service	363	4.3636	0.68528
The CBE's staff appointed on E-commerce banking employees/Help desks is always willing to help me.	363	4.2534	0.79133

The bank's E-commerce service offers a meaningful guarantee for customers	363	4.2259	0.86279
During problem occurs solving measurement of the bank is fast and accessible	363	4.2397	0.79039
Employees of bank have the knowledge to answer customer questions about e-commerce product	363	3.8099	0.97182
E-commerce services is provided in multi-local languages	363	3.9036	0.84033
E-commerce product of the bank provides more physical facilities to the customers	363	4.1515	0.72574
Average Responsiveness Dimension	363	<b>4.08</b>	<b>0.8188</b>

Source: Own Survey, 2022

The above, results shows the level of agreements of the respondents towards E-commerce banking packages on responsiveness dimension. The dimensions result was ranged from the lowest mean 3.6915 (Problem solving way of the service affect the satisfaction of the service) to the highest mean 4.3636 (Bank quickly respond to my requests on e-commerce service) Thus, the average level of agreements of the respondents on responsiveness dimension scored 4.08 mean with **0.8188** of standard deviation. This indicates that maximum numbers of the respondents were agreeing on the responsiveness of E-commerce service.

Table 4.7 Respondent's response on Empathy Dimension

empathy Dimension	N	Mean	Std. Deviation
I get personal attention from bank employee, if need of contact arises	363	2.9862	0.78122
Employees of the Bank understand my specific needs.	363	3.0799	0.82214
It is easy to find what I need on the E-commerce services.	363	3.3223	0.57884
When I get a problem, Bank shows a sincere interest in solving it	363	4.0110	0.86356
It is quick to complete a transaction through the bank's e-commerce service.	363	3.3223	0.62030
The bank gives me Up to date content for E-commerce services	363	2.7906	0.66084
Average Empathy Dimension	363	<b>3.2521</b>	<b>0.7211</b>

Source: Own Survey, 2022

The above, results shows the level of agreements of the respondents towards E-commerce banking packages on empathy quality dimension. The dimensions result was ranged from the lowest mean 2.7906(The bank gives me Up to date content for E-commerce services) to the highest mean 4.0110 (When I get a problem, Bank shows a sincere interest in solving it)Thus, the average level of agreements of the respondents on empathy quality dimension scored 3.2521 mean with 0.7211 of standard deviation. This indicates that maximum number of the respondents were neutral agreement on the empathy dimension of E-commerce service.

Table 4.8 Respondent’s response on Empathy Dimension

security Dimension	N	Mean	Std. Deviation
E-commerce services by the bank provide security for transaction data and privacy	363	3.2727	0.50413
E-commerce products provide by the bank is secure	363	3.9311	0.78887
feel safe and secure while making transactions through Ecommerce service like mobile banking and internet banking	363	3.5399	0.92266
My E-commerce Banking site does not share my personal information with other sites	363	3.1570	0.47025
E-commerce banking provide by CBE give high value for security for transaction data and privacy	363	3.2975	0.46971
Average security Dimension	363	<b>3.4397</b>	<b>0.6311</b>

Source: Own Survey, 2022

The above, a result indicates the level of agreements of the respondents towards E-commerce banking packages on security quality dimension. The dimensions result was ranged from the lowest mean 3.1570(My E-commerce Banking site does not share my personal information with other sites) to the highest mean 3.9311(E-commerce products provide by the bank is secure). Thus, the average level of agreements of the respondents on security quality dimension scored 3.4397 mean with 0.6311 of standard deviation. This indicates that maximum numbers of the respondents were agreeing on the security dimension of E-commerce service.

This study used SERVQUAL model to measure the customer’s expectation and perception on the e-commerce service provided by Commercial Bank of Ethiopia. In this model there are 34 questions presented in relation to the service quality measurements. These five dimensions are:

reliability, customer awareness, responsiveness, empathy and security. It used the five Likert scale to measure the performances of e-commerce service.

The above results suggest that all service quality dimensions are good and around satisfactory level. As far as the mean values are concerned, out of the e-commerce service quality dimensions transaction reliability (mean of 4.07), customer awareness (mean of 4.007), responsiveness (mean of 4.08), empathy (mean of 3.2521) and security (mean of 3.4397) have relatively major roles on e-commerce service quality and in turn overall e-commerce banking customer satisfaction.

Thus addressing the e-commerce service quality delivered by Commercial Bank of Ethiopia emphasis should be placed on these quality dimensions improvement using different mechanisms.

#### 4.4.3 Level of Customer Satisfaction Customer

Satisfaction is a measure of how products and services provided by a company in order to meet or surpass customer's expectation. The researchers, Parasuraman, Zeithaml, and Berry (1985), proposed that when perceived service quality is higher than customer expectation, then it will lead to improve in customer satisfaction. For measuring the level of customer satisfaction in CBE e-commerce users, this study comprised a question that asked the expectation and perception level of the respondents. The customer's response for the above mention statement is summarize and presented in the table below

Table 4.9 Level of customer satisfaction

overall satisfaction statements	N	Mean	Std. Deviation
I am satisfied with the bank's e-commerce service quality provide by the bank	363	2.9201	0.67857
I am satisfied with the daily transfer limit using E-commerce service	363	3.1928	0.54240
I'm satisfied with the physical facilities, innovativeness, easy to use and visual presence of E-commerce banking service devices	363	3.4435	1.02401
E-commerce service is better than traditional banking service and satisfy my needs	363	3.6446	0.89065

I am satisfied by e-commerce because informed me by SMS alert on time	363	3.1488	0.61286
I am satisfied by e-commerce based give service 24hr in a day and 7 days in a week's including holiday	363	3.1928	0.40882
I am satisfied by e-commerce banking to always not to visit bank in crucial case	363	3.1846	0.77359
I'm satisfied with the knowledge and courtesy of employees to convey trust and confidence, and give E-commerce banking service safety and security	363	3.2534	0.63655
Average	363	<b>3.2476</b>	<b>0.6959</b>

Source: Own Survey, 2022

The above result presented that from the listed item included in the overall satisfaction variables E-commerce service is better than traditional banking service and satisfy my needs has the highest mean 3.6446 with the standard deviation 0.89065 and the least mean 2.9201 with the standard deviation 0.67857 scorer I am satisfied with the bank's e-commerce service quality provide by the bank. The average mean of the overall customer satisfaction score 3.2476. The result shows the satisfaction level is less than satisfactory.

### 4.3 Inferential Analysis

#### 4.3.1 Normality

Screening for normality is an important step when conducting a multiple regression as assuming residuals are normally distributed. As per the Classical Linear Regression Models assumptions, the error term should be normally distributed or expected value of the errors terms should be zero

( $E(u_t)=0$ ). (Stevens, 2009; Tabachnick & Fidell, 2006).

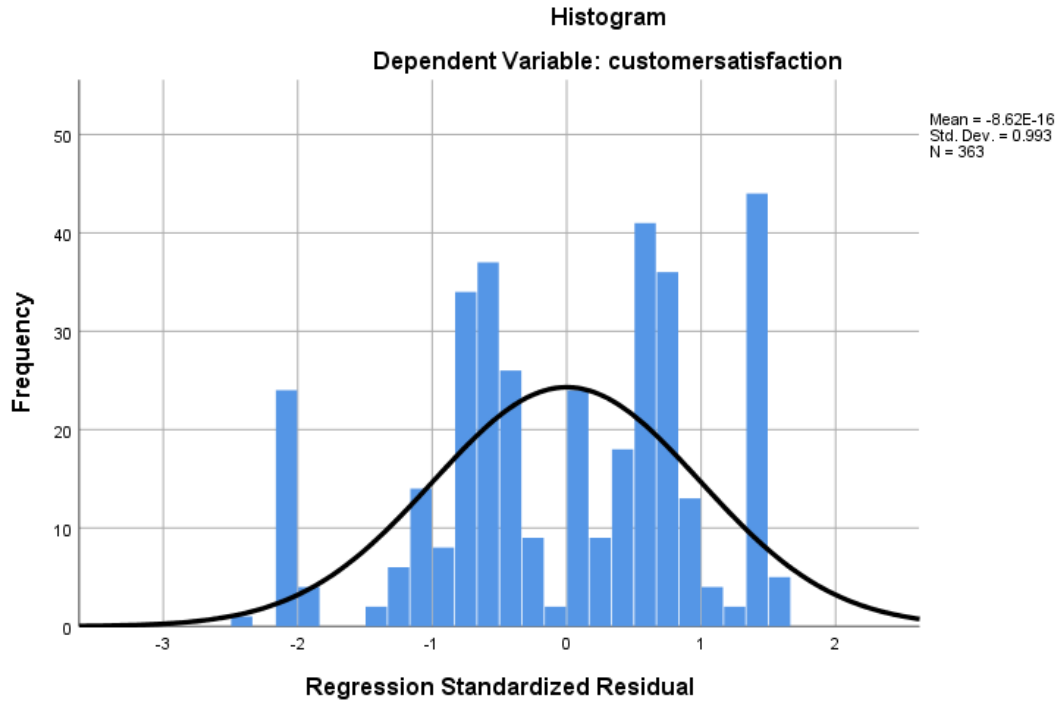


Fig 4.1 Histogram of Regression Standardized Residual

Source: Own Survey, 2022

In addition to Normal Probability plots of residuals, the histogram was used to test the normality of data. Hence, Figure 4.1 shows the frequency distribution of the standardized residuals compared to a normal distribution. As you can see, although there are some residuals (e.g., those occurring around 0) that are relatively far away from the curve, many of the residuals are fairly close. Moreover the histogram is bell shaped which lead to infer that the residual (disturbance or

errors) are normally distributed. Thus, no violations of the assumption normally distributed error

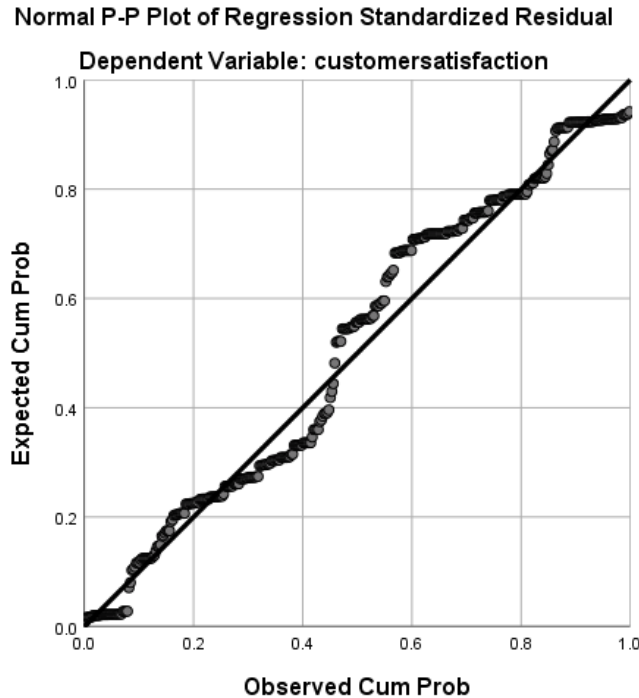


Figure 4.2: Normal P-P Plot of Regression Standardized Residual

Source: Own Survey, 2022

The normality assumption can be test through the visual examination of normal probability plots (P-P plots) of the standardized residuals. In a P-plot the normal distribution is depicted a random scatter of plots around 45-degree line. Figure 4.2 showed the normality of data in this research.

#### **4.4 Correlation Analysis between Customer Satisfaction in E-commerce and Explanatory Variables**

Correlation analysis is primarily concerned with finding out whether a significant relationship exists between two variables (Field, 2005). It is used to describe the strength and direction of the linear relationship between two variables. Pearson correlation (commonly called Pearson Correlation Coefficient) is used for the study to investigate a relationship between deposit mobilization and bank performance. The value of Pearson product-moment correlation coefficient ( $r$ ) normally varies between -1 to +1. The sign indicates whether there is a positive correlation (as one variable increase, other also increase) or negative correlation (as one variable increase, other decrease).

According to Field (2005), a coefficient(r) of +1 indicates a perfect positive relationship while -1 indicates a negative relationship. Breaking down the strength of the relationship, values of  $r = \pm 0.1$  to  $\pm .29$  represent a weak relationship while  $r = \pm 0.3$  to  $\pm 0.49$  represent a medium relationship while  $r = \pm 0.5$  to  $\pm 1.0$  indicate a strong relationship. The results of correlation analysis between e-commerce service and customer satisfaction qualities are depicted in the following table.

Table 4.10 The Relation between independent and dependent Variables

		Reliability	Customer awareness	Responsive ness	Empathy l	Security	Customer Satisfaction
Reliability	Pearson Correlation	1					
	Sig. (2-tailed)						
Customer awareness	Pearson Correlation	.771**	1				
	Sig. (2-tailed)	.000					
Responsiveness	Pearson Correlation	.779**	.889**	1			
	Sig. (2-tailed)	.000	.000				
Empathy	Pearson Correlation	.657**	.737**	.757**	1		
	Sig. (2-tailed)	.000	.000	.000			
Security		.720**	.667**	.757**	.732**	1	

Customer Satisfaction	Pearson Correlation	.880**	.641**	.329**	.820**	.527**	1
	Sig. (2-tailed)	.000	.000	.000	.000		
**. Correlation is significant at the 0.01 level (2-tailed).							

Source: Own survey (2022)

The above table shows that all service quality dimensions have positive and significant correlation with customer satisfaction at level  $P < 0.01$  and varying degrees of coefficient depending on the type of service quality attributes that contain. Thus, reliability and customer satisfaction has high positive correlation coefficient (0.880); followed by empathy (0.820).customer awareness has moderate positive correlation coefficient (.641); followed by security correlation coefficient of (0.527) and responsiveness (0.329) respectively. . In general, the above table shows that, the service quality measurements have a positive and important associate with customer satisfaction.

#### 4.5 Multiple Linear Regression Analysis

The multiple regression analysis enables you to assess the strength of relationship between a numerical dependent variable and two or more numerical independent variables. Calculating a multiple regression coefficient and regression equation using two or more independent variables is termed multiple regression analysis. The coefficient of determination (represented by  $R^2$ ) can take on any value between 0 and +1. It measures the proportion of the variation in a dependent variable that can be explained statistically by the independent variables (Saunders et al., 2009). Multiple linear regression analysis is a method used to examine the relationship between two or more independent variables and one dependent variable. The aim of this analysis is to examine the dimensions of E-commerce service quality to the customer satisfaction in CBE and to identify which of the dimension of service quality causes the most significant effect toward customer satisfaction in CBE.

Table 4.11 Durbin-Watson Statistics for Independence of Residuals

Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin - Watson
1	.895a	0.802	0.8001	0.4589	2.257

a Predictors: (Constant), Security, customer awareness, Empathy, Reliability, Responsiveness

b Dependent Variable: customer satisfaction

Source: Own survey (2022)

The R value (0.895) indicates that the presence of strong correlation between predictors and dependent variable. Adjusted  $R^2$  is a measure of the loss of predictive power or shrinkage in regression. The adjusted  $R^2$  shows us how much variance in the outcome would be considered for if the model had been derived from the source population from which the sample was taken. Adjusted R-squared is always smaller than R-squared, but the difference is usually very small unless you are trying to estimate too many coefficients from too small a sample in the presence of too much noise. The model summary indicated that SERVQUAL dimensions (Empathy, customer awareness, Reliability, Responsiveness, and Security) described 80.2% of the difference in customer satisfaction and the remaining 19.8% of the variation of customer satisfaction was clarified by factors that are not included in this model. Therefore, a further research should be conducted to study the other factors that affect customer satisfaction on e-commerce in commercial bank of Ethiopia particularly Megegnagna district. The R value (0.895) indicates that the presence of strong correlation between predictors and dependent variable. The model is statistically significant so that the regression equation has a very high explanatory power.

Independent residuals called Durbin-Watson Statistics test that used to measure the extent to which the value of a dependent variable at time is related to its value at the previous time period (autocorrelation). As a general rule according to Eskandarpour (2016) acceptable range of

Durbin-Watson 1.5 to 2.5. For this study the above table, the output value of Durbin-Watson Statistics of this study was 2.257, which implies that the result regression analysis was reliable

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	115.302	5	23.06	290.428	.000 <sup>b</sup>	
	Residual	28.372	357	.0794			
	Total	143.674	362				

a Dependent Variable: customer satisfaction

b Predictors: (Constant), Security, customer awareness, Empathy, Reliability, Responsiveness

**Source: Own survey (2022)**

From the ANOVA test in table above it shows the table Sig. value 0.01 is greater than the calculated Sig. value 0.000. It reflects there was a statistically significant correlation between dependent variable and independent variables at 1% significant level. Which means the explanatory variables; reliability, customer awareness, responsiveness empathy and security have great contribution to improve e-commerce banking customer satisfaction level among Commercial Banks of Ethiopia Megenagna district specifically. But it does not mean that all these factors of ecommerce service quality have equally significant correlation with customer satisfaction level. The results of the multiple linear regression analysis signal that there is variation in the effect of e-commerce banking service quality dimensions on customer satisfaction. Beside the F statistics (290.428) which is used to measure the overall test of significance of the model was presented, and null hypothesis can be clearly rejected since the p-value is 0.000 which is sufficiently low, the model is well fitted at 1 percent level of significance.

Table 4.12 Model Coefficients between service quality dimensions and customer satisfaction

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Beta			Tolerance	VIF
1	(Constant)	0.83	0.012	2.859	0.000		
	Reliability	0.36	0.320	0.557	0.018	0.861	1.161

	Customer awareness	0.224	0.240	0.218	0.008	0.303	3.305
	Responsiveness	0.156	0.285	0.739	0.006	0.212	4.707
	Empathy	0.117	0.121	0.335	0.003	0.735	1.361
	Security	0.110	0.102	0.032	.0001	0.52	1.925
a Dependent Variable: customer satisfaction							

**Source: Own survey (2022)**

As per the multiple regression result customer satisfaction is positively influence by reliability, customer awareness responsiveness, Security and empathy. Based on the Unstandardized coefficients, reliability has a coefficient of (B= 0.320) with significant value equal (0.018) <0.05, Customer awareness (B=0.240, sig. =0.008< (0.05), responsiveness (B=0.285, sig=0.006(<0.05) have the high effect on customer satisfaction. On other hand, the finding further indicates that empathy (B=0.121, sig. =0.003(< 0.05) and security (B=.102, sig=.0001(<0.05) had relatively less positive effect on customer satisfaction.

**Model specification:**

$$CSEB = \beta_1 + \beta_2 Rel + \beta_3 Cus + \beta_4 Res + \beta_5 Emp + \beta_6 Sec + \varepsilon$$

CSEB = .83 +.36Rel+.224Cus+.156Res+.117Emp+.110Sec+ ε.....this is the optimal model based on the finding of this study.

**4.6 Hypothesis Testing**

Under this sub title, the research hypothesis will be test as per the research finding

- ❖ Hypothesis 1: E-commerce service reliability has no positive and significant effect on customer satisfaction. Reliability affects customer satisfaction positively with beta coefficient 0.36 with 0.018 significant values. This indicates that an increase in reliability will affect customer satisfaction positively. This Hypothesis is rejecting.
- ❖ Hypothesis 2: e-commerce service and customer awareness has no positive and significant effect on customer satisfaction. Customer awareness affects customer satisfaction positively with beta coefficient 0.224 with 0.008 significant values. This indicates that an increase in customer awareness will affect customer satisfaction positively but not significantly This Hypothesis is failed to reject.
- ❖ Hypothesis 3: e-commerce service and responsiveness has no positive and significant effect on customer satisfaction. Responsiveness affects customer satisfaction positively with beta

coefficient 0.156 with 0.006 significant values. This implies that an increase in responsiveness will affect customer satisfaction positively. This Hypothesis is rejecting.

- ❖ Hypothesis 4: e-commerce service Empathy has no positive and significant effect on customer satisfaction. Empathy affects customer satisfaction positively with beta coefficient 0.117 with 0.003 significant values. This implies that an increase in empathy will affect customer satisfaction positively but not significantly. This Hypothesis is failed to reject.
- ❖ Hypothesis 5: e-commerce service security has no positive and significant effect on customer satisfaction. Security affects customer satisfaction positively with beta coefficient 0.110 with 0.001 significant values. This implies that an increase in security will affect customer satisfaction positively. This Hypothesis is rejected.

Table 4.13 Customers Response on the Challenges of e-commerce Service

		Frequency	Percentage
Social and cultural barriers such as less awareness and negative perception	DA	25	6.9
	Neutral	143	39.4
	Agree	132	36.4
	SA	63	17.4
	Total	363	100
	Frequent power interruption seriously affect the practice of E-commerce banking practice	DA	64
Neutral		212	58.4
Agree		87	24
Total		363	100
Knowledge barriers such as Lack of trust by customer, lack of technological knowledge and language barriers	Neutral	144	39.7
	Agree	178	49
	SA	41	11.3
	Total	363	100

The daily transfer amounts limit transfer using e-commerce.	DA	30	8.3
	Neutra		
	1	153	42.1
	Agree	166	45.7
	SA	14	3.9
	Total	363	100
I Lack of technical and managerial skills on the use technological innovation.	DA	14	3.9
	Neutra		
	1	103	28.4
	Agree	193	53.2
	SA	53	14.6
	Total	363	100
The quality level of the service	DA	78	21.5
	Neutra		
	1	156	42.9
	Agree	95	26.2
	SA	34	9.4
	Total	363	100

Source: Own survey (2022)

From question 1, 17.4% of the e-commerce users are strongly agree that are there is highest challenge, 36.4% of the e-commerce users are agree the existence of higher challenge , 39.4% are indifferent the existence of the stated challenge and 6.9%. 53.8% of respondents are agree about the challenge Social and cultural barriers such as less attentiveness and negative perception. So the bank management and the concerned organ should give devotion and make an improvement on social and cultural Barriers high challenge of e-commerce.

From question 2, 24% of the e-commerce users are agree the presence of higher challenge, 58.4 % are indifferent the existence of the stated challenge and 17.6 are dis agree%. Then most of the respondents neutrally about frequent power interruption seriously affect the practice of E-commerce banking practice

From question 3, 11.3% of the e-commerce users are strongly agree that there is highest challenge, 49% of the e-commerce users are agree the existence of higher challenge and 39.7% are indifferent the existence of the stated challenge. 60.3% are agree about Knowledge barriers such as Lack of trust by customer, lack of technological knowledge and language barriers. So the bank management and the stake holders should give attention and make an improvement on Lack of trust by customer, lack of technological knowledge and language barriers.

From question 4, 3.9% of the users are strongly agree that there is highest challenge, 45.7% of the e-commerce users are agree the existence of higher challenge, 42.1% indifferent the existence of the stated challenge and 8.3% of respondents are disagree. In sum 49.6% of are agree with the daily transfer amounts limit transfer using e-commerce. Therefore the bank needs improvement on daily transfer amount using e-commerce services, especially mobile banking daily transfer limit is only 200,000 birr per day this difficult for the customers have big daily number of transaction.

From question 5, 14.6% of the users are strongly agree that there is highest challenge, 53.2% of the e-commerce users are agree the existence of higher challenge, 28.4% are indifferent the actuality of the stated challenge. 57.8% of respondents are agree about the challenge. So the bank management and other stakeholders should give attention and make an improvement on I Lack of technical and managerial skills on the use technological innovation using different mechanisms like giving trainings use recent technologies.

From question 6, 9.4% strongly agree 26.2% agree, 42.9% are the respondents neutral response and 21.5% disagree response about the quality level of the service of e-commerce services given in CBE. From this result indicates the e-commerce services in CBE needs improvements. So the bank management and the concerned organ should give responsiveness and make an improvement on the service quality of the e-commerce services.

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents a Summary of Findings, Conclusions, and Recommendations.

Findings from this study are based on analysis in the previous chapter and in reference to the research questions in chapter one, presents the recommendations for further studies.

#### 5.1 Summary of Major Findings

The main objective of the study is to examine the Effect of E-commerce services on Customer Satisfaction: The Case of CBE Megenagna district. The study adopted descriptive and explanatory research design with mixed research approach approaches. The structured questionnaires were distributed to 399 using E-commerce service customers, employees and managers of 10 CBE branches found under Megenagna district. Then, analysis was made based on descriptive statistics, Pearson correlation and multiple regression analysis methods.

The major findings of the study were summarized as follows;

- the majority (70%) e-commerce users are between age 18-30
- From the gender perspective 56.7% were male respondents;
- Most of the respondents (32%) were those with a first degree education level.
- The majority of respondents (36%) earn income in between br.5,001- 10,000;
- most of respondents' experience with E-commerce service was less than 2 years
- In the descriptive statistics analysis, the average mean of respondents on reliability, customer awareness, responsiveness, empathy, security and customer satisfaction dimension were scored 4.07, 4.007, 4.08, 3.2521, 3.4397 and 3.2476 respectively.
- The Pearson correlation analysis result show correlation coefficient and significant level of reliability ( $r=0.880$  &  $P<0.01$ ), customer awareness ( $r=0.641$  &  $P<0.01$ ), empathy ( $r=0.820$  &  $P<0.01$ ), responsiveness ( $r=0.329$  &  $P<0.01$ ), and security ( $r=0.527$  &  $P<0.01$ ).
- The multiple regression analysis results show, reliability ( $\beta=0.32$ ,  $p<0.01$ ), responsiveness ( $\beta=0.285$ ,  $p<0.01$ ), customer awareness ( $\beta=0.224$ ,  $p<0.01$ ), empathy ( $\beta=0.121$ ,  $p<0.01$ ), and security ( $\beta=0.102$ ,  $p<0.01$ ). Then, the model summary results reported  $R^2=0.802$  and ANOVA test show the model significance at  $P<0.01$  level.

The independent variables those are the five service quality dimensions, have a positive relationship with customer satisfaction in e-commerce services as per the hypothesis tested and agreed. Beside for the response of question in reliability, customer awareness, responsiveness, empathy and security leads to increase in customer satisfaction by 32%, 28.5%, 22.4%, 12.1% and 10.2% respectively which are significant at 5% level of confidence. The results of this study further showed that reliability is the most significant factor to have both positive and significant effect on customer satisfaction followed by customer awareness and responsiveness

Frequent power interruption seriously affects the practice of E-commerce banking practice, Knowledge barriers such as Lack of trust by customer, lack of technological knowledge and language barriers, the daily transfer amounts limit transfer using e-commerce, I Lack of technical and managerial skills on the use technological innovation and the quality level of the service are among the challenges in E-commerce services in CBE.

## **5.2 Conclusion**

The study has studied the effect of E-commerce service on customer satisfaction in the case of CBE Megenegna district selected branches. Based on statistical analysis, it has been observed that customers are impartially satisfied with the E-commerce banking services that have been delivering by CBE Megenegna district.

Descriptive analysis results revealed that the majority of current e-commerce users are youth between the ages of 18 up to 30, gender of the majority users are men's.

The study found that as ability to perform ordered service dependable and accurately (reliability) increase, the satisfaction of the customer towards E-commerce service in CBE Megenagna District also increase and vice versa. Thus, the reliability of E-banking service has a positive and significant associate with customer satisfaction. This study also concluded that, E-commerce service reliability has strong positive and significant effect on customer satisfaction.

Similarly, the study also found that, customers awareness on E-commerce service increases, the use of the service as well as customer satisfaction towards the E-commerce service increase and vice versa. This is because of a positive and significant associate of customer awareness dimensions with customer satisfaction. But, this study concluded that, the customers' awareness of dimension of E-commerce service also has strong positive and significant effect on customer satisfaction

In addition to this, the study also shown that as Prompt delivery of services to customers (responsiveness) increase, the customer satisfaction towards the E-commerce service also improved. This is because of a positive and significant associate of E-commerce service responsiveness with customer satisfaction. The researcher also concluded that, E-commerce service responsiveness has strong positive and significant effect on customer satisfaction.

The study also found that, as individualized attention to the E-commerce users (empathy) increases, the customer satisfaction towards the E-commerce service increase and vice versa. This is because of a positive and significant associate of empathy dimensions with customer satisfaction. But, this study concluded that, the empathy of dimension of E-commerce service has relatively low positive and significant effect on customer satisfaction.

The study found that, as security increases, the customer satisfaction towards the E-commerce service increase and vice versa. This is because of a positive and significant associate of security dimension with customer satisfaction. But, this study concluded that, the security of dimension of E-commerce service has relatively low positive and significant effect on customer satisfaction.

In general, when all service quality dimensions taken as predictor of customer satisfaction, responsiveness has high positive and significant effect on customer satisfaction followed by reliability and customer awareness whereas empathy and security have relatively less effect on customer satisfaction. The model summary results confirm that results generated by the five E-banking service quality dimensions explain 80.2% ( $R^2=0.802$ ) variation in customer satisfaction and ANOVA test confirmed that the model is significant at  $P<0.01$  level.

### **5.3 Recommendations**

According to the findings and conclusions of the study, the researcher forwards the following recommendations

- The Banks should work much in increasing the number of users from all aspects that is from age, educational status, and income level and should do great job in making-business men/women to be the users of e-commerce services.
- In order to improve customer satisfaction on empathy dimension, it is recommended that CBE should work on customer treatment in order to understand the specific needs of customers of E-commerce, through showing sincere interest in solving when they get a difficulties and try as much as possible to ensue or exceed customers'' expectation which related with the services provided by E-commerce.

- In order to improve customer satisfaction on security dimension, it is recommended CBE should do on the improvement of service security use recent technologies, by improve awareness of customers how can use e-commerce services securely.
- Commercial bank of Ethiopia should work with ethio-telecom & Ethiopian Electric Power to resolve service interruptions and minimize the brunt of the consequences of unreliable services.
- Technology demands well developed ICT infrastructures therefore the respected stake holders should work to develop on technology improvement and expand ICT infrastructures.
- Finally the management and the stake holders focus on the service quality of e-commerce services through improving using recent technologies, increasing awareness of customers. Shortly focus on quality and quality service not on quantity only

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Appendix

**Addis Ababa University School of Commerce graduate Program**

**Department of Marketing Management Distance Learning Program**

The purpose of this questionnaire is to collect firsthand information for a study being conducted on the topic, "ON THE EFFECT OF E-COMMERCE SERVICES ON CUSTOMER SATISFACTION IN CASE OF COMMERCIAL BANK OF ETHIOPIA" as partial fulfillment of award of Master Degree in MSC Marketing Management. To this end, I kindly request you to provide me genuine information, to the best of your knowledge, so that the findings of the study would be legitimate. The study is purely academic research. Therefore, for sure, all your responses will be kept confidential. I would like to thank you for your willingness, effort and sharing precious time to fill the questionnaire and returning it the earliest possible.

Instruction: Please use tick mark (√) or mark (X) in the boxes provided to choose from the options given and answer in writing where appropriate. You don't have to write your name.

**Part I: general Information about the respondents.**

1. Sex a.Male  b.Female
2. Age a.18-20  b. 20-30  c. 30-40  d.40-50   
e. ≥
3. What is the highest level of education you have completed?
  1. Less than secondary School  2. Secondary School completed
  3. Diploma /TVET  Graduate  4.BA/BSC
  5. Master's Degree and above
4. Income Level in Birr: 1. ≤ 5000  2.5000-10000  3.10000-50000  4.50000-100000  5. ≥ 100000
5. Which service types do you use? 1. Mobile Banking  2. Internet Banking   
3. Both
6. Which type of customer you are with the bank? 1. Employee of CBE  2. Individual   
3. Corporate
7. How many years have you been use the service?

1) ≤ 2 years  2) 2-5 years  3) above 5 years

8) How many times used the service in a month

1. 5 time & below it  2. 6– 10 times   
 3. 11–15 times  4. Above 15 times

**Part II: Relationship between Service quality dimensions and customer satisfaction**

**Using E-commerce products in CBE.**

This survey deals with your opinions of service of E-commerce products service. Please show the extent to which you think Mobile Banking service should possess the following features. What we are interested in here is a number that best shows your expectations about Mobile and Internet Banking service offering bank services.

No	Dimensions of customer satisfaction	Strongly Dis agree	Dis agree	Neutral	Agree	Strongly agree
		1	2	3	4	5
Reliability	E-commerce completes a task accurately					
	E-commerce deliver the service exactly as promise					
	The Bank give honest concern in answering my problems, related to e-commerce services transactions					
	E-commerce perform the service right at the first time					
	The Bank has modern-looking technical equipment for e-commerce banking services					
	I have not had complications with e-commerce banking services such as Internet banking and Mobile banking processes of this bank.					
	The e-commerce service supports in keeping transaction records properly					
Customer awareness	Customers have high awareness on the e-commerce banking services benefits and challenges.					

	Is E commerce Reduce the long queue available banking hall					
	E-commerce banking products Improve customers satisfaction					
	E-commerce services Increase Speed and efficiency					
	E-commerce Increase reliability and accessibility					
	The culture of the society also affect the customers to use e-commerce banking product easily					
Responsiveness	Problem solving way of the service affect the satisfaction of the service					
	Response of service through e-commerce banking is very prompt and quick					
	The E-commerce products of the bank provides me with convenient options for reversing or adjusting transaction					
	Bank quickly respond to my requests on e-commerce service					
	The CBE's staff appointed on E-commerce banking employees/Help desks is always willing to help me.					
	The bank's E-commerce service offers a meaningful guarantee for customers					
	During problem occurs solving measurement of the bank is fast and accessible					
	Employees of bank have the knowledge to answer customer questions about e-commerce product					
	E-commerce services is provided in multi-local languages					
	E-commerce product of the bank provides more physical facilities to the customers					
Empathy	I get personal attention from bank employee, if need of contact arises					
	Employees of the Bank understand my specific needs.					
	It is easy to find what I need on the E-					

	commerce services.					
	When I get a problem, Bank shows a sincere interest in solving it					
	It is quick to complete a transaction through the bank's e-commerce service.					
	The bank gives me Up to date content for E-commerce services					
Security	E-commerce services by the bank provide security for transaction data and privacy					
	E-commerce products provide by the bank is secure					
	feel safe and secure while making transactions through Ecommerce service like mobile banking and internet banking					
	My E-commerce Banking site does not share my personal information with other sites					
	E-commerce banking provide by CBE give high value for security for transaction data and privacy					

### III Challenges in Using E-commerce to Improve Customers' Satisfaction

1	Social and cultural barriers such as less awareness and negative perception					
2	Frequent power interruption seriously affect the practice of E-banking practice					
3	Knowledge barriers such as Lack of trust by customer, lack of technological knowledge and language barriers					
4	The daily transfer amounts limit transfer using e-commerce.					
5	I Lack of technical and managerial skills on the use technological innovation.					
6	The quality level of the service					

### IV.E-commerce and customer satisfaction

No	Description of dimensions of quality of	Strongly	Dis	Neutral	Agree	Strongly
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	customer satisfactions	Dis agree	agree			Agree
1	I am satisfied with the bank's e-commerce service quality provide by the bank					
2	I am satisfied with the daily transfer limit using E-commerce service					
3	I'm satisfied with the physical facilities, innovativeness, easy to use and visual presence of E-commerce banking service devices					
4	E-commerce service is better than traditional banking service and satisfy my needs					
5	I am satisfied by e-commerce because informed me by SMS alert on time					
6	I am satisfied by e-commerce based give service 24hr in a day and 7 days in a week's including holiday					
7	I am satisfied by e-commerce banking to always not to visit bank in crucial case					
8.	I'm satisfied with the knowledge and courtesy of employees to convey trust and confidence, and give E-commerce banking service safety and security					