

MEKELLE UNIVERSITY
COLLAGE OF BUSINESS AND ECONOMICS
DEPARTMENT OF MANAGEMENT



**CHALLENGES AND OPPORTUNITIES OF E-BANKING SYSTEM IN
COMMERCIAL BANK OF ETHIOPIA (CBE MAIN DISTRICT OFFICE) IN
MEKELLE CITY**

**A RESEARCH PAPER SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE MASTER OF BUSINESS
ADMINISTRATION DEGREE**

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October 2025

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DECLARATION

I, Gebremedhin Takele, hereby declare that this paper titled "CHALLENGES AND OPPORTUNITIES OF E-BANKING SYSTEM IN COMMERCIAL BANK OF ETHIOPIA: at the Main district office in Mekelle City," submitted by me for the award of a Master's Degree in Business Administration at Mekelle University, is my original work. It has not been presented for the award of any other degree, fellowship, or any other similar title at any other university or institution.

Mekelle University, Tigray, Ethiopia

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CERTIFICATION And Approval sheet

This is to certify that this thesis, titled "CHALLENGES AND OPPORTUNITIES OF E-BANKING SYSTEM IN COMMERCIAL BANK OF ETHIOPIA: The Case of commercial bank of Ethiopia at the main district office ," has been submitted in partial fulfillment of the requirements for the master's degree in Business Administration at Mekelle University College of Business and Economics, Department of Management. It was completed by Gebremedhin Takele, ID No. CBE/MBAR/002/13, and is reliable work carried out under my supervision. To the best of our knowledge and belief, the content of this project has not been previously submitted for any degree award.

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Acknowledgment

First of all, I would like to say thanks to Almighty God, who is always with me, and above all to Dr. Mulu Aderie for their constructive comments, dedication of their precious time in reading. concerning this ThesisAdvice, and direction. Further more my gratitude goes to Mr.Tikue Abrha and Mr. Mamuye Teklay for their support during through out my thesis work. I want to express my gratitude in particular to the informants. who contributes alot by giving their precious time ,for their cooperation and dedication in supplying current information and filling out the questionnaire, which are critical to the completion of this study. Finally, I would also like to thank my beloved all of my family members for their endless support during my work.

Contents

DECLARATION	I
CERTIFICATION	II
Acknowledgment	III
List of Tables	Error! Bookmark not defined.
Abstract	VI
CHAPTER ONE	1
1.1 Background of the Study	1
1.2 Statement of the problem	4
1.2.1 Research question	9
1.3. Objective of the study.....	9
1.3.1 General objective	9
1.3.2. Specific objective	9
1.4. Significance of the study	9
1.5. Scope of the study	10
1.6. Organization of the paper	10
CHAPTER TWO	11
RELATED LITERATURE REVIEW	11
2.1. Background and Definition of e-banking	11
2.3. Theoretical foundations on adoption of electronic banking	18
2.5. Empirical studies	30
2.6 conceptual frame work.....	34
CHAPTER THREE	35
RESEARCH METHODOLOGY	35
3.1. Introduction:	35
3.2. Research Design	35
3.3. population and sampling design	36
3.3.1 Sample size.....	36
3.3.2. Sampling Technique.....	37

3.4. Data collection instrument	37
3.5. Data Analysis	37
3.6. Ethical Considerations	37
CHAPTER 4	39
DATA PRESENTATION AND ANALYSIS	39
Description of Sample	39
4.1 Demographic Characteristics of Respondents	40
4.1.2 . Gender Distribution	40
4.1.3 Age Distribution of Respondents	40
4.1.4 Educational Level of Informants	41
4.2 .Types of electronic banking the sample respondents use	42
Descriptive Statistics Analysis	42
4.3. E-Banking opportunities in commercial Bank of Ethiopia	45
4.4. The challenge of electronic banking	48
4.5 Benefits of electronic banking	52
Chapter five	54
Summary of key findings, conclusion, and recommendation	54
5.1 Summary of key findings	54
5.2 conclusion	56
5.3. Recommendation	57
5.4 Limitation of the research	58
REFERENCES	59
Appendix1 Questionnaire	65

Abstract

The aim of this research was to investigate the challenges and opportunities of electronic banking users in the Commercial Bank of Ethiopia in Mekelle city at the main district office. The Researcher used 180 samples of e-banking users that were conveniently found around the Commercial Bank of Ethiopia, Mekelle main district office. The researcher employed a questionnaire instrument of data collection to analyze the opinions of electronic banking users regarding the challenges and opportunities of electronic banking. The researchers findings, the opportunities and benefits were increasing habit of customers to use e-banking, governments role on by establishment of directive and guideline of e-banking like limiting cash withdrawal and commitment and expansion of ICT infrastructure, denial of unauthorized access,provision of speed and convenient service were among the main opportunities of electronic banking. and also, beyond the opportunities electronic banking play important role on customers by better provision of service at low cost,low transaction error and mistakes, provision of bank service with minimum cycle time, safe, facilitate e purchasing, satisfy customers with speed of service, updating account.in addition to the above challenges of e banking was lack of reliable power and weak internet penetration, fear of security , lacks of trust of by customer ,fraud and scamming, lack of legal frame of e-banking to resolve dispute, poor inter banking network connectivity, providing weak and suspect able password to users, outdated software application was among the challenges of e-banking. Hence, the research found the above-listed opportunities and challenges. The researcher recommends as following: Create awareness on customers that e-banking is easy to use, fast and convenient, so as to avoid the fear and worry of customers. the bank should build strong e-banking network connectivity to provide fast, reliable and convenient e-banking service to customers. Monitor and track the online-banking system to protect unauthorized access of scammers and to avoid/reduce financial fraud and update new information to customers via social media, SMS or main stream media channels to aware, Provide strong PIN and pass word to users that is not vulnerable and easily suspect able or teach to user to change their password with strong code and not to show to anyone. The bank uses blockchain security protection tools such as biometric authentication methods, facial recognition, and fraud detection to meet regulatory framework, strengthen cyber security defence, and build lasting trust with customers.

Keywords:

E-commerce, e-banking, business

CHAPTER ONE

1.1 Background of the Study

The Global financial landscape has been fundamentally reshaped by electronic banking (e-banking), a transformative technology that has rendered obsolete many traditional, paper-based transactions. At its core, e-banking is the transfer of funds through an exchange of electronic signals (instead of cash, cheques, or other paper documents), relying on intricate computer systems and communication networks to record transfers and control access to funds. Broadly, it encompasses the use of Information and Communication Technology (ICT) and electronic means by a bank to conduct transactions and interact with all stakeholders (Abdi and Noreen, 2016). The emergence of e-banking is a direct consequence of globalization and the rapid development of Information Technology (IT) systems (Kurnia, 2010, pp. 10-15). It functions as a self-service delivery channel, enabling banks to provide information and services to customers at their convenience via various electronic platforms, including telephone, internet, and mobile devices (Magemhe, 2002). This system offers users convenient access to banking activities, such as retrieving account balances, transferring funds, and viewing account history (Claessens et al., 2012). A common method of user identification and access is through an access code, such as a Personal Identification Number (PIN), often used at an Automated Teller Machine (ATM).

The broader context for e-banking is Electronic Commerce (E-Commerce), which utilizes the internet network to facilitate transactions between different stakeholders. E-commerce aims to improve organizational performance by enabling faster, better, and more cost-efficient service provision (Zheng et al., 2023). This technological shift has profoundly impacted the global economy, allowing businesses, including small-scale enterprises in emerging countries, to expand beyond territorial boundaries and compete effectively in foreign markets (Mahammed, 2014). From a service perspective, E-Commerce is a tool that helps firms reduce service costs and improve the quality and speed of service delivery (Truban, 2010). Given that banking services are widely described as the "Engines for economic growth", the revolutionary application of IT and the internet has become critical for the banking sector to achieve its objectives (Wasie Getahun Negatu, 2021).

The adoption of e-banking across Africa has been a transformative, though uneven, process, significantly reshaping the continent's financial landscape. The movement gained traction in the early 2000s pioneered by platforms like M-PESA in Kenya, which initially focused on simple mobile money transfers. These platforms quickly adapted to meet broader banking needs, recognizing the potential to serve Africa's large unbanked population. According to the African Digital Banking Transformation Report (2023), approximately 48% of Africans utilize some form of e-banking service. The evolution of e-banking in Africa has been driven by the rapid proliferation of mobile technology, widespread government support, and the emergence of neo-banks (Africa, bank, & bank, 2023). However, adoption rates are highly dependent on the diverse socio-economic landscape of the sub-Saharan region, particularly factors such as internet connectivity, the level of economic development, availability of infrastructure, and local literacy rates. Consequently, countries with higher levels of economic development and infrastructure, such as South Africa, Egypt, and Nigeria, are among the continent's dominant e-banking adopters (World Economic Forum Report).

1.1.3 E-Banking Background and Development in Ethiopia

The Ethiopian banking industry, traditionally characterized by limited technological infrastructure, has undergone a structured process of modernization following the introduction of e-banking. The development is often classified into three distinct phases (National Bank of Ethiopia, 2023):

1st Phase (2000–2010): Early Development. This phase involved banks recognizing the importance of e-banking and initiating policies to encourage its adoption, with the primary objective of enabling users to check accounts and transfer funds. However, progress was limited due to poor internet connection and a lack of customer awareness.

2nd Phase (2011–2015): Growth Phase. Several banks, including the Commercial Bank of Ethiopia and Dashen Bank, made significant investments to roll out platforms for mobile banking and internet banking. This period saw enhanced government support in improving telecommunication infrastructure and an increase in customer awareness and smartphone usage for transactions.

3rd Phase (2016–Present): Expansion and Diversification. The e-banking trend has grown exponentially, driven by increased smartphone penetration and better internet connectivity. Banks are expanding services to incorporate options like bill payments and investment options on their platforms. As of 2025, the focus has shifted towards maximizing customer experience through innovative technologies like Artificial Intelligence and Blockchain for secure transactions and automated customer service.

Despite this progress, the adoption of e-banking continues to face significant challenges. Recent empirical studies highlight these issues:

- ❖ **Channel Profitability:** A study by Kasaye Alamrew (2025) found that investment in POS terminals had a significant negative effect on both ROA and ROE, suggesting that the current infrastructure and high operational costs outweigh the financial returns for some banks.
- ❖ **Infrastructural and Behavioural Challenges:** Recent reviews, such as one on *Electronic-Banking in Ethiopia- Practices, Opportunities and Challenges (2025)*, consistently cite infrastructural limitations, security issues, and low financial literacy as critical challenges.
- ❖ **Financial Inclusion:** Research, including that cited by Jerene & Sharma (2020), in the effect of financial technology on financial inclusion in Ethiopia during the digital economy era (2024), explores the positive role of financial technology in inclusion but also notes the slow diffusion compared to other countries.

These studies confirm the evolving nature of e-banking adoption in Ethiopia, balancing significant opportunities for growth with persistent operational and market barriers. The development and evaluation of the electronic banking system in Ethiopia provide a vital context for this study. However, as far as the current research effort has determined, the specific potential opportunities and challenges of adopting the e-banking system within the Commercial Bank of Ethiopia main district office (CBE) in Mekelle City have not yet been comprehensively investigated.

1.2 Statement of the problem

Information technology upgrading has been a part of virtually all reform programmes, the aim is to improve data management and analysis, lower compliance cost, reduction in corruption and improve monitoring, reduction in errors and mistakes committed by employees during actual working condition. However, there were also draw backs that hinder the effective implementation of the system due the lack of coordination and integration among different stack holders, power interruption, delay, lack of adequate knowledge on the system, security problem and fear of fraud are among the challenges of the e system (BRUCE J. BERMAN, 2009).

Even though there is draw backs, the benefit out weights the potential risk of the system the world is on the dynamic way of adopting new system so as to enhance efficiency, reduce operating cost, and improve in quality of product or service, enhance communication, better data management and security, support to make sound decision-making optimizing resource utilization through the innovation and adoption of electronics processing system (Harvard business review).

Among the adopters of the virtual system financial institution was the forerunners. Commercial bank is undergoing rapid change as the international economy expands and advance towards institutionalization and market completeness. The major cause for this change was technological change. Those shifts have major impact in breaching geographical, industrial and regulatory barriers, creating new product service, market opportunity & developing more information system and process oriented business process (Liao and chung 2002). One of product global technology was innovation of e-banking and the application e-banking. In late 1990s banks originate the concepts of web-based service e-banking as strategic obligatory as way of maintain their customers and building loyalty. Banks look for web-based banking, it was developed since 1995 when the Maryland presidential bank an American bank allowed bank account to be opened online. (Sathye.M, 2000)

The electronics banking system facilitate service through the internet without visiting the bank hall in person this reduces the travel expense, the time spent in to travel and the waiting/ queuing system in the perspective of the customer, simultaneously on the side of the bank, attract too many customers at shorter period of time, reduce compliance, enhance productivity and

efficiency of operation, replacing the old paper based and vague operation of banking System by automation and easily traceable system which enhance productivity and performance of the business enterprise (Taylor.S.A, 2013). E- Banking is a method in which a person can made payment on his purchase to their goods and service without hard cash transfer(physical transfer of cash, cheque, irrespective of time and location (Sujith T S, Opportunities and Challenges of E- Payment System in India, 2021).in the era of 21th century Electronic payment was the most dominant way (technique) used over the world.it bring all stockholder to perform various activity and on at their hands. electronic fund transfer has been described as third of the great age of payment. The first payment mechanism were cash (coin and notes),the second developments was paper based example cheque and the third payment method was e-payment (kilnoze2007).

The information and communication applications are of paramount concern to the banks in today's business environment, and the internet has become a major platform for all financial banking and commercial transactions in the present scenario, statistic show that Africa is lagging behind in the adoption of e-commerce. However, according to Jensen (2003), there e-commerce activity in Africa, with South Africa, Egypt, Morocco taking the lead in Africa except South Africa internet infrastructure was only in major cities and towns. Recently, several African countries have made progress in the adoption of e-commerce link to ingrate themselves with the global connectivity roadmap. Electronic banking has been widely used in developed countries and is rapidly expanding in developing countries, in Ethiopia However, cash still the dominant medium of exchange, and electronic systems are at embryonic stage.

Even though the e-banking is at infant stage the e-banking system was adopted by commercial banks operated in Ethiopia so as to stay in the market and to win the stiff completion among them. The Ethiopian banking sector was in a rapid growth both in number and in branch from time to time. According to the annual report of 2022/23 by the national bank the number of banks increased from 18 in 2020/2021 to 31 in 2022/23 additional 13 new banks were opened in one year further more number of branches also increased form 8,944 in 2020/21/ to 11281 banks in 2022/23. This indicates there fierce and stiff competitions in the-banking sector. One of the mechanisms to play by the banks so as to stay and compete in the sectoral market was adoption of e-banking system so as to operate a head of competitor and to survive

at the market. So The researcher intention here is to investigate what are the opportunities and challenges of adopting e-banking system. Similar studies have been conducted in Ethiopia by (werku., 2015) studied On Adoption of mobile-banking in Addis Ababa banking and found that There is Positive and significance relationship b/n perceive usefulness, perceived ease of use, compatibility and relative advantage and adoption. But the title is too small in scope of e-banking (mobile-banking only).

The main benefits of e-banking as identified by (Kashun.G, 2016) it reduces operating costs substantially, convenience to customers, speed and fund management but the researchers finding was limited to the benefits on the positive perspective ignoring the limitations /risk of the adoption.

According to the findings of (Meron.S, 2017) study Conducted on assessment of challenges of e payment practice in commercial bank of Ethiopia found that the variables such as lack of awareness, technological issue, security concern, regulatory and legal frame work, resistance to change are among the challenges of e payment and only focused on e payment feature of e banking.

Tamrat (2017) Investigate on the factors affecting adoption of agent banking in lion international bank here the case lion bank and concentrate only on agent banking.

(Hayat, 2017) Assessed the E-banking adoption entitled only on mobile-banking

According to the findings of Yikeber (2018), most local bank embarks on mobile and agent banking service with the directive NBE FIS01/2012 and in the coming future it will be more supported by new e commerce law, trade and telecom liberalization.

(Nardos, 2019), concludes capitalizing on the existing e-banking plate forms the stated owned commercial bank of Ethiopia and private banks in Ethiopia continued their high competition in providing service including ATM, internet banking, POS, mobile-banking is among the others here the research simply only listed down the types of e-banking not defining their prospects and possible challenges.

According to the findings of (Goshu, 2019) conducted research on the determinants of mobile bank adoption in Bako district and found that quality of internet, lack of awareness experience education, Gender, income and age are found to be the main determinants. the research was

geographical limited to Bako district and title is limited to mobile-banking only. but none of the above listed researches was conducted in commercial bank of Ethiopia Mekelle city(main commercial bank of Ethiopia main district office) there is **area gap** that motivate for the research to investigate it, **secondly** the researchers that have been done previously were focused on the specific types of e-banking like mobile-banking and e payment not inclusive enough to see the wider concept of e-banking, **Third** prior researcher titled on opportunities and challenges of e-banking were analyzed their findings based on banks perspective here the researcher try to explore what are the key opportunities and challenges of e-banking on customers perspective. So, the researcher selects the topic of assessing the key opportunity and challenges of e-banking in commercial bank of Ethiopia Mekelle city. the objective of this paper is to identify opportunity and challenges of electronic banking in commercial bank of Ethiopia found at main district office of commercial bank of Ethiopia in Mekelle city. This assessment would enable the banks to render better e-banking service to their customer, adopt new strategies to cope with challenges and meet customer needs.

Scientific Justification for E-Banking Study

The shift towards electronic banking is not merely a business trend but a necessary and justifiable transformation rooted in **economic theory, technological principles, and competitive strategy**.

1. Rooted in Economic and Management Theory

The imperative for e-banking is justified by two primary theoretical frameworks:

- **Transaction Cost Economics (TCE):** E-banking directly addresses the goal of minimizing transaction costs for both banks and customers. By automating services, it achieves superior efficiency by reducing the marginal cost of service delivery compared to high-overhead physical branches. For the customer, it reduces the "cost of access" (time, travel, and queuing), a critical factor in consumer utility and satisfaction (Taylor, 2013). The ability to replace error-prone, paper-based processes with traceable, automated systems contributes to a verifiable reduction in operational expenses.

- **Agency Theory and Governance:** IT upgrading is a formal mechanism to mitigate agency problems within large organizations. By enhancing data integrity and instituting verifiable audit trails, e-banking systems enforce transparency, combat corruption, and lower compliance costs (BRUCE J. BERMAN, 2009). This structural control minimizes discretionary errors committed by employees, leading to more reliable financial reporting and regulatory compliance.

2. Justification via Technological Adoption Models

The adoption and subsequent challenges of e-banking are explained through behavioral and strategic models:

Technology Acceptance Model (TAM) and Diffusion of Innovation (DOI):

The bank's decision to adopt e-banking is a strategic one, justified by the theory of competitive necessity. These systems offer a Relative Advantage (convenience, speed) over traditional methods, which is a primary driver of adoption according to DOI. However, the system's effectiveness is often limited by challenges, such as a lack of customer awareness and security fears, which fall under the Perceived Risk and Perceived Ease of Use constructs of TAM.

Technology-Organization-Environment (TOE) Framework: The persistent challenges in Ethiopia (infrastructure, security, and low literacy) are external (environmental) and internal (organizational/technological) factors that inhibit the full benefits of e-banking adoption. This framework provides the scientific basis for investigating how these contextual challenges limit the system's Perceived Usefulness and overall rate of diffusion.

3. Justification by Competitive and Market Dynamics

In the Ethiopian context, the study is justified by the principles of industrial organization:

- **Competitive Strategy:** The exponential growth in the number of Ethiopian banks (NBE, 2022/23) indicates a transition from a protected, state-dominated market to one with fierce rivalry. E-banking becomes a critical, non-price mechanism for product differentiation and establishing a competitive advantage. Banks must adopt these systems to survive and attract customers who prioritize digital access.

- **Financial Inclusion and Market Maturity:** Although cash remains dominant, the adoption of e-banking aligns the Ethiopian financial sector with global payment system evolution, described as the third great age of payment (Kilnoze, 2007). The study of this transition is scientifically vital to understand how emerging markets navigate the dual challenge of modernization and financial inclusion. By grounding the study in these principles, the investigation into opportunities (benefits: efficiency, reach) and challenges (constraints: infrastructure, risk) is framed as a critical analysis of the strategic gap between technological potential and real-world implementation.

1.2.1 Research question

- What are the main opportunities of using the e-banking system in
- What are the main challenges of the e-banking system?
- What are the benefits of adopting the e-banking system

1.3. Objective of the study

1.3.1 General objective

- The General objective of the study was to assess the challenges and opportunities of the electronic banking system in the Commercial Bank of Ethiopia, found at main district office of commercial bank of Ethiopia in Mekelle city.

1.3.2. Specific objective

- ✓ To assess the main challenges of the e-banking system in
- ✓ To describe the opportunities of using the e-banking system
- ✓ To assess the benefits of the e-banking system

1.4. Significance of the study

The empirical information produced through this study served as a basic document for future reference and existing knowledge improvement. Extension agents, policy makers, and researchers are concerned with the electronic banking system.

The significance of the study is to identify the major challenges and potential opportunities of the e-banking system in commercial bank of Ethiopia found in Mekelle city and to fore ward recommendations about the issue. It will also contribute for policy makers and the researchers to consider and to do further research. It was further providing evidence as to whether Adoption of e-banking systems main opportunities and challenges in the commercial bank of

Ethiopian. This study that can be help to improve their operational efficiency and effectiveness. These practices and techniques can be adopted either individually or as a set of practices.

The findings from this study may further aid firms in their Strategic formulation& Implementation regarding adoption of continuous improvement methodologies will appropriately enlighten firms' performance. The finding of this research may be appropriate guide for policy formulators on which Quality techniques or practices are most appropriate for adoption in their firms.

1.5. Scope of the study

The scope of the study conceptually limited with the intension of assessing the major challenges and opportunities of the e-banking system in commercial bank of Ethiopia. Geographically the study limited on the customer of commercial bank of Ethiopia Main branches in Mekelle city, the time bound in academic year 2017-2018.further more methodologically the research uses only survey data collection tools (questionaries') to compile the opinion of electronic banking user and to put the findings on it.

1.6. Organization of the paper

The paper consists of Five chapters the first chapter cover the introductory ideas about the title, i.e. introduction, statement of the problem, objective, and the significant of the study, the second chapter consists of theoretical and empirical evidences, the third chapter about the methodology, and finally the fourth one is the presentation and analysis of the data based on that the conclusion and recommendation follow.

CHAPTER TWO

RELATED LITERATURE REVIEW

The main purpose of this chapter is to critically review the relevant existing literature on the opportunities and challenges of electronic banking system.

2.1. Background and Definition of e-banking

Electronic banking is a process by which customers carry out banking transactions electronically without physically visiting the-banking site or financial institution (Simpson 2002), the e-banking creates unprecedented opportunities for banks in banks they organize financial products development, delivery, and marketing via the internet and enhance bank performance.

Before the introduction of electronic banking transaction were takes place manually by employee which slow down settlement of transaction, posting of transactions from one ledger to another by human the evolution of e-banking enable financial institution to fasten their service & minimize transaction cost (Kakuru.F, 2013).Those services were done by technological instruments such as personal computer, Automatic teller machine (ATM),Electronic fund transfer, internet banking ,Mobile-banking are among others are currently replacing the traditional banking system(Ibid).

Chmielarz (1999) A contemporary method of providing banking services, permitting their utilisation from any location worldwide, obviating the necessity for physical presence at a bank.

Automated delivery of new and traditional banking products and services directly to customers via electronic interactive communication channels Daniel (1999).

E-banking is A modern way of providing banking services without customers needing to visit the bank. It involves using IT systems and related equipment to streamline the cash cycle Szpringer (2000) A concept involving information and communication systems to improve and accelerate the circulation of cashless money Janc (2001).

A contactless form of implementing banking products and services, allowing customers to utilise them without visiting bank branches Dziuba (2002).

Electronic banking is a system designed primarily for financial institutions' use, enabling customers to perform specific financial operations remotely using telephones, faxes or computers Gospodarowicz (2002).

A system designed primarily for financial institutions' use, enabling customers to perform specific financial operations remotely using telephones, faxes or computers Gasparovich (2002). Pilawski (2002) Conducting banking transactions remotely, without the direct involvement of bank staff, with limited opportunity for the customer to receive advice.

Simson (2002), A novel electronic way enabling customers of banks and other financial institutions to access their accounts, settle their bills, manage their money and utilise various additional services.

A form of banking service provision that allows the customer to access their account via a computer or other electronic device and a telecommunications link Chojecki and Matysek (2003)

Pikkarainen et al. (2004) An online portal through which customers can access various banking services, from paying bills to making investments.

Ślązak and Borowski (2007) The application of ICT to serve customers, improve a bank's operational activities, and interbank exchange information and data.

Lee (2009); Online-banking is the most effective-banking transaction method as it offers many advantages that offline-banking channels cannot offer.

Keivani et al. (2010) A process whereby customers can perform banking activities electronically without visiting the bank's premises.

Jaworski and Zawadzka (2011) The provision of banking services at a distance that allows customers to use the service in their own offices or homes.

Karimzadeh and Alam (2012) Delivering banking products and services directly to customers through electronic interactive communication channels.

Polasik (2012) Banking activity that involves the remote provision of banking services to customers via electronic interactive communication channels, often as a separate offering.

Bouyon (2018); Digital banking is a technology used to provide the most up-to-date services to consumers and companies. Digitalisation means banks embrace all the latest technologies for efficient and responsive-banking operations.

Electronic banking is the method of multichannel model that deliver that deliver traditional banking activity of lending and deposit using bank teller assistance in a brick and mortar building to click and mortar retailer with banking customer customers processing transaction at their convenience. E-banking offer bank service such as balance inquiry, fund transfer, bill payment, loan brokerage. Electronic banking uses various channels to deliver service such as mobile-banking. Internet banking, ATM, agency banking among others. Commercial bank faced by an ever-dynamic competitive environment are inconstant pursuit of adoption, innovation or invention of e-banking strategy while expanding beyond geographical boundaries to improve competitiveness and to achieve performance such as profit maximization, customer satisfaction and firm growth (Schaechter 2002)

In the recent 20 years the way of living of the world changed dramatically, based on the new marketing paradigm for electronic commerce, suggests that the fundamental lack of faith between online store and consumer has prevented people from shopping online (Hoffman, Novak and Chatterjee,2006). Within the update of smart phones people completely buy whatever they want digitally. Digital goods are goods that can be delivered over digital network (Laudon, 2013). E commerce is rapidly transforming the way people interact with customer as well as with the government.

E- commerce was the technological breakthrough that enable us to made transaction through digitalization system by avoiding longer line and travel expenses, freedom to individual in paying their theirdebts, license, fee, fine and their purchase at an unconditional location and time (Sumanjeet.D, 2009).

An e commerce is generating revenueselling of goods and service online, by connecting buyer and the seller via the internet. With the increasing diffusion of ICTs, more specifically the Internet, the global business community is rapidly moving towards Business-to Business

(B2B) e-Commerce. The buyers gain a clear advantage when the Internet gives them access to the global market, by which they can compare prices across regions, find out whether prices vary by order fragmentation and get awareness about substitute products. Due to transparency of the market, customer can compare the services of various e-commerce sites easily.

2.2. Historical development of e commerce

The history of ecommerce started over 40 years ago, when the introduction of early technology like Electronic Data Interchange (EDI) and teleshopping in the 1970s paved the way for the modern-day ecommerce store as we know it today. The history of ecommerce is closely intertwined with the history of the internet. Online shopping became possible when the internet was opened to the public in 1991. The development of electronic data interchange (EDE) paved the way for electronic commerce the evaluation and growth of e commerce was as follow

1969 the first e commerce significant was established

1970 Michael Aldrich invented electronic shopping (also considered the inventor of Electronic Commerce). This was done by connecting a transaction-processing computer with a modified TV through a telephone connection. This was done for the transmission of secure data.

1982 continue the growth of technology invention of the e commerce plat form by Bosten computer exchange

1992 the online shopping system created

1994 web browser tools introduced and it was used on window plate form

1995: iconic e commerce was introduced Amazon and e -buy were launched

Amazon was one of the first ecommerce sites in the US to start selling products online and thousands of businesses have followed since. The convenience, safety, and enjoyable user experience of ecommerce have improved exponentially since the inception of online shopping. In his article, we will discuss some of the key players and milestones of ecommerce.

2.2.1 What is Ecommerce

Ecommerce, or electronic commerce, is the buying and selling of products or services via the internet. For many Americans, ecommerce is something we participate in on a daily basis, like making an online bill payment or purchasing from an online seller. Ecommerce can take many forms and involve different transactions. For an in-depth look at the impact of ecommerce and the different types of online shopping, check out our article on the definition e commerce (<https://blog.miva.com/the-history-of-ecommerce-how-did-it-all-begin#:~:text=The%20history%20of%20ecommerce%20started>).

Numerous factors such as; cheaper smartphones, affordable internet subscription, better infrastructural development, increased spending power, and the use of online payments are some of the growth driving factors. Furthermore, factors like cost saving and convenience are prompting consumers to choose e-commerce over traditional medium, other factors includes cheaper devices, faster internet speeds help drive the growth of online shopping (Jain, 2019)

Electronic commerce is sharing of business information, maintaining business relationship and made business transaction by means of telecommunication network (Vladimir.Z., 1996). Electronic commerce deal with the facilitation of transaction and selling of goods and service online either via the internet or any other Telecommunication network (Jolassi, 2005).

According to (Truban, 2018) e commerce can be defined as from communication perspective but not limited to and defined as the way of delivery of business information, product or service and made the payment agreements over varied communication lines such as telephone, computer network or other communication channels.

In addition to that when search the e commerce from business perspective, e commerce the application of technology towards automation of business transaction and flow of work. From the service perspective e commerce is the tool use to cater customers, reduce cost of service operation and effort made to improve service provision mechanism of the service provider. Finally, the e commerce concept from online perspective an instrument enabling atmosphere for product and service transaction.

E commerce user in Africa spent \$57 per year in 2017 this figure upgrade to \$72 in 2021, the market in Africa worth \$ 24 billion and the number of online shoppers grow at compound

annual growth rate 18% b/n 2014 -2018 higher than the global average 12%.the African e-commerce market is estimated to be worth \$36 billion in 2024. The e-commerce industry is a powerful growth engine for the African economy, positively impacting sellers, buyers and the market as a whole. Despite this there are also serious handicaps due to the low infrastructure, technical know problem Statista (2020).

2.2.1 Classification of e commerce

Turban et, al (2005), classify the e commerce as follows

Classification by seller (government, private business, & consumer

Classification by product / activity (type of product, service)

By source of revenue (advertising, fee, commission)

Task based (investment, shaping, banking,

Technology based (internet infrastructure, internet application framework)

In addition to the above definitions Turban, et.al (2005); also outlined that even though there was to many criteria used to classify the e commerce the major criteria were buyer /seller classification approach, here below are some of the platforms takes place on e commerce

Consumer to consumer (C2C): this kind transaction is made directly without human intermediary, this an avenue that individual online personal experience and auction of online expertise.

Consumer to Business(C2B); this type of transaction is the type of exchange made between the business and the customer with unsatisfied need, the business sold their product directly to user. The purpose was strong relationship and brand building, the objective of this type of e commerce was to change attitude of the customer.

Consumer to business (C2B): this kind of transaction also termed as demand collection, an avenue when individual sell products and service through the internet to other individual and organization. The individual set the price of the products and post online, the business units' asses the bid p rice and select the appropriate product to buy them.

Business to Business (B2B): the largest form of e business one business buys via online from another business.

Business to Business to customer (B2B2C): Transaction flow as one business unit sold products to another business, the recipient business also sold the product and service online to a customer with adding value on the product.

Business to employee: goods and service are passed on the employee through this medium.

2.3. Theoretical foundations on adoption of electronic banking

This research guided by relevant theories.

2.3.1 The Innovation diffusion theory

The innovation diffusion theory an individual's intention to adopt technology as modality to perform the traditional activity, this study was applied by (Mattila, 2002) during her study of on title of factors affecting adoption of mobile-banking service.

As a regard the innovation diffusion theory. (Clarke, 1995) Postulate the innovation diffusion theory attempt to explain and describe how the mechanisms how new invention in this case e-banking are adopted and How they become successful not all inventions were adopted even though their good it may take longer time for adopting them. Further stated that there is resistance to change may hindrance to diffusion and innovation. But it might not stop the innovation but may be slow down.

As out lined by the author Rogers (1962), The theory identifies five innovation attributes impacting its adoption: relative advantage (RA), compatibility (CO), complexity (CP), trialability (TR) and observability (OB). Relative advantage means that e-banking is perceived as better than traditional banking. Compatibility is the fit between e-banking and potential adopters' values, past experiences, and needs. Complexity is the degree of difficulty in understanding and utilizing e-banking. Trialability refers to a customer's experiments with e-banking before its wider use.

Observability is the degree to which someone's e-banking is visible to other users. This theory, however, does not consider social and individual factors and perceived risk in explaining e-banking diffusion.

2.3.2 Theory of Reasoned Action (TRA)

The theory postulates that individuals are rational beings who contemplate the implications of their actions before making decisions. According to TRA, an individual's conscious behaviour is a function of the attitudes of the surrounding environment, including family, friends, and colleagues. Regarding e-banking, a positive attitude towards it and tremendous environmental pressure on its use are significant predictors of acceptance and use. Fishbein and Ajzen (1975).

2.2.2 The transaction cost innovation theory

The transaction cost theory was introduced by Hicks and Niehans (1983) who championed and portrayed that the most the foremost aspect of financial innovation is able to reduce cost of transaction. The ability to lower cost of transaction brings about innovation in financial and upgrade financial services (Kurgat, 2018).

The importance of transaction cost innovation theory in installation of internet related activity such as significantly lessen cost of transaction/companies exchange cost since it provides service through effective coordination administration and best utilization of data. consequentially the use of cellphone and internet banking reduce operating cost, the growth and profitability of banks grow significantly. This theory is relevant regarding to assess what are the effect /benefits of the adoption of electronic banking on transactional cost of the bank.

2.3.3 Contingency theory

The proponents of this theory states that process and outcome the firm more determine by the internal structure of firm and the change in external environment aswell as readiness of the firm to adopt it. The internal structure system and strategy must fit with the dynamics external environment (goodness of fit), internal operating policy and strategies and tactics fit with external environmental circumstances (Pegh, 2008). so the assessments of the opportunity and challenges of electronic banking system helps for the bank to adjust and mitigate situational problem arose in delivering electronic banking system.

2.3.4 Industrial organizational economic theory

Industrial organizational economic theory deal with organizational characteristics to compete in a given industry, firms position relative to rival the quantity or quality of organizational resource which had strategic importance to the organization (Shecher 1980). according to Bensons 1995 organizations use organizational economic theory to influence the market structure in favor organizational strategy and performance but other proponents, i.e Bain (1956) argue organizational property within and industry helps the organization to produce an above average performance in profitability, the variables growth strategy, capital intensity for the organization and advertising intensity.

2.3.5 System theory

System theory is an intertwined and interdisciplinary study of organizational system with the goal of enhancing organizational cohesion, connectedness and performance, building on general system theory model such as open system theory viable system model viable system approach has emerged in quest to solidify organizations operational efficiency using organizational system. Opensystem is the organizations interacting with environmental in which their involved. The term open system deal with the organization ability to coup with the dynamism of environment to adopt change.

2.5.4. Technology Acceptance Model

According to the studies of Davis, Bagozzi and Warshaw (1989) used the technology acceptance model (TAM) to describe how customers come to use and accept technology. The decision of users on when and how to use technology is influenced by perceived usefulness (PU) and perceived ease of use (PEOU).

Davis et al (1989) explained perceived usefulness is the extent into which one believes there would be improvement of job performance as a result of use of improved technology. According to Ezzi (2014), perceived ease of use is the extent into which one would be free from effort as a result of using a particular system.

On the findings of Davis et al (1989) discovered that, information system that is much easier to use is more likely to influence a positive attitude and the intention to use in order to enhance performance. Perceived usefulness affects attitude towards acceptance of information system which is also affected by the ease of use.

Despite ease of use determines acceptance and adoption of information system, it may not explain consumers behaviour to adopt internet banking.

2.3.5. The Theory of planned behavior

The theory of planned behavior was used to human behavior Intention to engage in a behavior determines an individual behavior (Ajzan 1999). If one intends to use electronic banking the degree to which the person may favored or unfavored the use of e-banking is the attitude in consideration of the outcome of its use. Subjective norm is another contributing factor that

affects people's intention towards using electronic banking. Subjective norms are an individual's belief regarding important others approval or disapproval of the use of electronic banking. It relates to the persons belief about what important people to the person would think if he or she should use electronic banking.

Perceived behavioural control is the perceived likelihood that various events would occur that would encourage or discourage the use of electronic banking this includes past experience as well as expected impediments and obstacles. Teo (2000) employed (TPB) and discovered that benefits of electronic banking have encouraged its increased use in the-banking sector.

Previous studies on (TPB) suggested that more valuables need to be used to increase predictability. The TPB model expands the TRA framework by incorporating perceived behavioural control (PBC) as a further determinant of individuals' intentions and behaviours. PBC is defined as an individual's resources and available capabilities that facilitate adopting a specific behaviour. In the e-banking case, this means that a person who has access to digital devices (computer, smartphone, tablet, software) and IT infrastructure (Internet) will be more likely to accept and use the e-banking system.

Decomposed Theory of Planned Behaviour (DTPB)

Similarly, to the TPB and TAM, the DTPB assumes that behavioural intention is the most crucial determinant of e-banking usage behaviour, affecting its usage.

The DTPB decomposes attitudinal, normative, and control beliefs into multi-dimensional belief constructs. By focusing on specific beliefs, the DTBP provides a more managerially relevant perspective, identifying numerous factors influencing the adoption and use of e-banking.

Expectation Confirmation Model (ECM)

Expectation–confirmation theory assumes three factors influencing consumers' decision to continue using e commerce services: satisfaction, perceived usefulness, and loyalty incentives. ECM posits that satisfaction with a product or service is the primary motivation for its continuance. Satisfaction is an ex-post evaluation of the consumer's initial (trial) experience with the service, which can be captured as a positive feeling (satisfaction) indifference, or a negative feeling. The model suggests that satisfied customers continue using

e-banking while dissatisfied users discontinue it and/or switch to alternative services (Bhattacharjee (2001)).

Technology Continuance Theory (TCT)

The TCT integrates two constructs, attitude and satisfaction, and three first-level antecedents: confirmation, perceived usefulness, and perceived ease of use into a continuation intention model. It can be applied to e-banking users at various stages of the adoption lifecycle, i.e., initial, short-term and long-term users.

In the ECM model, the behavioural intention of initial adopters unfamiliar with the e-service is affected by the e-service's perceived usefulness, attitude and general satisfaction. For short-term users, satisfaction or dissatisfaction with the e-system is a crucial determinant of intention to continue use.

Following extensive utilisation, the e-service system performance and usefulness are endorsed by both initial and long-term users; the perceived usefulness is no longer a primary driver of continued usage. Subsequently, an individual's psychological judgement, such as attitude, determines continued usage.

Generally, the initial adopters' intentions to continue are mainly influenced by satisfaction, attitude, and perceived usefulness. Short-term and long-term users' behavioural intentions are influenced by satisfaction and attitude.

2.4. Electronic Banking strategies

According to Joseph et.al (2015) E-banking entails banking business conducted via web as opposed to physical banking location with strategies users use to check bank account, settle bill online, fund transfer and acquire loans electronically. Bank can offer e-banking either as web enabled physical entity offering internet banking to users above the traditional banking channels or establishing virtual branch less or internet bank only (Furstet,al 2000).

According to Ngango (2015), E-banking service is accessed through electronic device like PC ,PDAs, ATM, Kiosk and mobile phone, being a multichannel device model there exist various forms of e-banking those includes mobile-banking ,agent banking, internet banking, the system were adopted globally for various reason those includes improve competitiveness,

saving of time and money for users, cost efficiency and opportunity for enhancing market share, as wider customer base including those remotely acquired either within the country or internationally is gained (Peng 2009).

The term e-banking can be defined differently by different scholars

Electronic banking strategies simply refer to as the provision of banking service and products mostly retail in nature via electronic channels. In more elaborative definition by Lusaya and Kulumba (2018), the term electronic banking service is the automation of delivery banking service and products in such a manner that the customer directly accesses them through digital interactive communication via electronic channels. Thus strategies primarily designed to facilitate and enable banking customers to access banking service through electronic transaction. Those strategies are important in banking industry because they are largely considered as capable of facilitating fast and convenient customer banking service at any time and any place (Salvantana et al., 2016).

Electronic banking service can reduce operating cost because it eliminates the frontline employee to serve customer and also the bank has additional capability to attract new customer through electronic banking service at the same time help for the e bank to retain the existing customer of the bank by providing quality service (Maduku D.K., 2014).

Types of electronic banking

1. **Online-banking:** the system that empowers the customers to manage their accounts seamlessly through online platforms facilitates activity like account access, transaction, payment and fund transfer. It offers convenient accessibility, security and range of service such as bill payment, account management, online transactions with online-banking customer can monitor their finance in real time and really track their spending habit.
2. **Mobile-banking:** Mobile-banking allows the users to access their accounts, view activities, make payments, and transfer funds using smartphones or other mobile devices. Designed for on-the-go convenience, mobile banking provides easy access to banking services anytime and anywhere through mobile applications. Additionally, mobile banking offers features like biometric authentication for enhanced security and peace of

mind and use of a PIN. the earliest t mobile-banking was offered over short message service (SMS), a service know for banking service mobile-banking used in many parts of the world with minimum infrastructure specially in remote and rural area this method is most popular in countries where most of the population is unbanked(Tiware,et,al 2007).

3. **ATMBanking**; enable customers to access their accounts view activity, make payments transfer funds conveniently through automatic teller machine it provide 24/7 open access to banking service such as cash withdrawal, deposit and account inquiry through ATM network. Moreover, ATM banking functionality cash withdrawal through cradles and mobile integration to add convenience.it is machine where cash withdrawal can be made over the machine without going to the bank hall accessible 24/7 with account balance inquiry.it run automatically through identity like card and pass ward. ATM provides service like withdrawal, fund transfer, balance inquiry, mini statement and money transfer from account to another(Fenuga, 2010).
4. **Directdeposit**; direct deposit simplifies income management by permitting a user to have salary, government subsidy or other income directly deposit in to their account.
5. **Electronicfundtransfer (EFT)**: service provide secure means to customer to manage finance through electronic payment and money transfer between account and financial institution. It enables efficient and secure fund transfer using device like card or codes to access account electronically
6. **Electronic bill payment**; electronic bill payment permits the customer use to settle bill electronically thorough online platform or mobile, offering convenient way to manage financial obligation. It simplifies bill payment for users by providing an efficient method to settle funds using utility payment, credit card payment,and loan repayment.Furthermore electronic bill payment offer bill schedule option And for recurring payment set for add convenience.
7. **Onlineinvesting**: e-banking allows to customer to purchase investment like stock bond and mutual funds through online plate forms.it enables user to conveniently invest in financial market through on line plate form with easy accessibility.
8. **Pointofsales (POS)** also referred to as point of purchase check out the location where the transaction is occurred check out refers to where the terminals or more generally to

the hard ware and software used to check out equivalent to the electronic cash register. Pos manage the selling process by sales person accessible interface. the same system allow the creation and printing of receipt POS system record sales for business and tax purpose (shutu, 2010).

2.4 Key Features of electronic bank

1. **Account management;** e-banking allows users effortlessly manage different accounts from single Online plate form including current and saving account credit card and loan.
2. **Fundtransfer;** Enable quick and secure fund transfer through NEFT, RTGS, and IMPS OR UPU mode.
3. **Billpayment:** online or e-banking simplify bill payment, allowing user to settle utility bill credit card, loan payment online mobile recharges.
4. **Onlinestatementandalerts;**offer access to online account statements eliminating the need for paper statements.

Key benefits of e- banking

- Transferring funds: e-banking provide swift fund transfer between accounts, ensuring efficiency and convenience without physical bank visit.
- Availability; the service available 24/7 open access allow for customers to conduct their transaction at any time at any place.
- **Easytooperate;** user friendly interface and available tutorials make e-banking plate form easy to navigate ensuring seamless and straight forward banking experience.
- **Convenience:** e-banking eliminates the time consuming to visit the-banking hall/site to receive service. Offeringuserthe flexible to perform the transaction from any were and any time& save time.
- **Activity tracking:** user can track their account activity real time gaining visibility and control over their finance with features like transaction history and account balance update.

The significance of electronic banking

Costefficient; E-banking streamline transaction saving clients time and money without frequent branch visit. **NoGeographicbarrier;** e-banking eliminates geographic constraints allows transaction from anywhere.

Convenience; The clientenjoy24/7access to their account managing finance quickly and flexibly.

Forthebusiness; Enhance efficiency, cost reduction, error reduction fraud prevention, paper work reduction and customer loyalty.

2.4. Challenges in E-banking

1.Implementation of global technology:

There is a necessity to have a quite level of infrastructure and good human capacity building prior the developing countries may adopt global technology for their local needs. In developing countries, many clients either do not trust or do not access to the needful infrastructure that is to be able to process electronic payments (Kaur & Rajneesh, 2014).

2. **Security Issue:** is one of the important issues for E-banking. In the case of any monetary damages to the clients, the bank 's reputation is spoiled. The security risk is the main threat from the hackers, who can use several types of information of public peoples for reason of criminal activity. While Sometimes hackers hike the passwords of the clients cause to theft their money or some hidden or secret information (Kazmi & Hashim, 2015).

3.**Strengthening the public support:** In developing countries, in the previous year's most e finance initiatives have been the result of joint efforts between the non-public and public sectors. If the public sector does not have the necessary resources to implement the projects it is important that joint efforts between public and non-public sectors along with the multilateral agencies like the World Bank, be developed to enable public support for e-finance related initiatives (Kaur & Rajneesh, 2014).

4. **Trust :** trust plays a key role for E-banking, but the lack of trust is the main issue in the growth and development of electronic banking alerts, security alerts and reminders, and Balance and Transaction notifications (Kazmi & Hashim, 2015).

Opportunities of E-banking for the customers

According to the study that was conducted by KassahunGirma stated the benefit of E-banking for Customers as follows: the main benefit from the bank customers _point of view is significant saving of time by the automation of banking services processing and introduction of an easy maintenance tools for managing customer 's money. The main advantages of E-banking for corporate customers are as follows

1. Reduced costs in accessing and using the-banking services. ☐
2. Increased comfort and time saving — transactions can be made 7x24, without requiring the physical interaction with the bank. ☐
3. Quick and continuous access to information: Corporations will have easier access to information as, they can check on multiple accounts at the click of a button.
4. Better cash management: E-banking facilities speed up cash cycle and increases efficiency of business processes as large variety of cash management instruments is available on internet sites. ☐
5. For example, it is possible to manage company'sshort-term cash via internet banks (investments in over-night, short- and long-term deposits, in commercial papers, in bonds and equities, in money market funds). Private customers seek slightly different kind of benefits from e-banking.
6. Reduced costs: This is in terms of the cost of availing and using the various banking products and services.
7. Convenience: All the-banking transactions can be performed from the comfort of the home or office or from the place a customer wants. ☐
8. Speed: The response of the medium is very fast; therefore, customers can actually wait till the last minute before concluding a fund transfer.
9. Funds management: Customers can download their history of different accounts and do a —what-if —analysis on their own PC before affecting any transaction on the web. This will lead 20 to better funds management.

In addition, withdrawing cash customers can also have mini banks statements balance inquiry at these ATMs. Through Internet Banking customer can operate his account while sitting in his office or home. There is no need to go to the bank in person for

such matter- Banking has also greatly helped in payment of utility bill. Now there is no need to stay in long queues outside banks for his purpose. All services that are usually available from the local bank can be found on a single website. The Growth of credit card usage also owes greatly to E-banking. Now a customer can shop worldwide without any need of carrying paper money with him and banks are available each day in a week and they are only a mouse click away.

Determinants of customers' use of e-banking as a distribution channel for banking products and services

Customer acceptance is a prerequisite for their engagement with e-banking. E-banking technologies enable them to use-banking products and services remotely. For banks, the conditions under which customers accept and use e-banking transaction systems determine the sale of products and services, significantly impacting banks' financial performance. Understanding the determinants of customers' use of e-banking is essential because it allows banks to influence consumers' effective demand for e-banking products and services and thus shape their competitive position in the market.

The determinants of the acceptance/rejection of e-banking can be divided into the following categories or dimensions.

- ❖ customer benefits and costs of e-banking,
- ❖ e-banking system technologies,
- ❖ access to computers, mobile devices, software and the Internet,
- ❖ customers' IT knowledge (literacy) and skills,
- ❖ social pressure (family, friends and acquaintances),
- ❖ risks of using electronic banking,
- ❖ education on the use of e-banking systems.

Empirical research reported in the literature suggests that the socio-demographic characteristics of bank customers also significantly affect their use of e-banking. These personal attributes include:

- ❖ young people are more frequent e-banking users than older people),
- ❖ gender (men are more active users than women),

- ❖ Education level (people with tertiary education are more likely to use e-banking than those with primary or secondary education),
- ❖ Income (more affluent people are more likely to use e-banking than those with low income),
- ❖ attitudes (people with positive attitudes and awareness of e-banking benefits are more likely to accept it than those who perceive only threats),

2.5. Empirical studies

- ❖ Ram and Sheth (1989) argue that consumer resistance to the innovation is caused by functional barriers and psychological barriers. Functional barriers can be divided into three: the usage barrier, the value barrier and the risk barrier, whereas psychological barriers can be 24 divided into tradition barrier and image barrier. But author emphasis on barriers to innovation.
- ❖ According to Ram and Sheth (1989) functional barriers arise when consumers perceive changes would take place when adopting innovation and the psychological barriers are caused by consumer's beliefs. But the author ignores the structural barriers.
- ❖ hand Khanfar et al (2006) conducted study on the customer satisfaction with internet banking web site in the Arab Bank. The study identified some factors which can determine customer's satisfaction in the use of internet banking service. Such as; customer supports, security, ease of use, digital products/services, transaction and payment, information content, and innovation. Researchers employ a survey questionnaire to gather data and their results showed that there is a narrow-based satisfaction with internet banking in all factors through a multiple regression; the researchers found out that all factors have an impact on customer satisfaction, and they have found that the relation was positive. but the researcher fail to include the challenges of internet banking and only investigate the impact of internet bank.
- ❖ Customer acceptance and use of e-banking technology are related to the characteristics of both individual customers and to specific technology more ever, e-banking products and services are also viewed as ways to retain existing customer and to attract under banked and unbanked customer (Anguelov, C.E., Marianne A. Hilgert, M.A., and Hogarth J. M. ()) focus only on benefits of e banking.
- ❖ Electronic bank has become the most advanced service used all over the world it brings the stockholders to perform their various activities and transaction at their hand. The technological innovation play crucial role in adding value to the bank and to the customers that enable the customer to made transaction without visiting the bank branches in person. (Deilotee2010).
- ❖ Garda chew (2010) conducted research on opportunities and challenges of Electronic banking in Ethiopia. The aim of his study was focused on analysing the status of electronic banking in Ethiopia and investigates the main challenges and opportunities

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

- ❖ The adoption of e-banking as a strategy was applied in Kenya but the issue of security was a major critical factor in influencing the adoption. In addition to the security concern other variables like inadequate regulatory and legal framework, lack of in-house professionals and quality infrastructure (Justus M Munyoki, 2011).
- ❖ The key barriers to the adoption of electronic banking system in Ethiopia was low level of internet infrastructure, lack of legal and regulatory framework, and lack of trust limited technical and managerial skill and resistance to change high cost of implementation and the driver are competitive pressure, customer demand operational efficiency, global trend (Gemechu, 2012). The researcher tendency to cover the obstacles of e banking system.
- ❖ According to the finding of Kamau (2014), there is strong and positive relationship between bank strategy and banks performance. Tried to link the cause and effect relationship between bank strategy and performance in broad concept fail to show the effect and implication of ebanking.
- ❖ The growth of web based service has stimulated many fraudulent practices that take advantage of some of the technologies short comings Aberu,et,al 2016.
- ❖ (Padiyar, 2024) Pointed out that E-banking was initiated with the objective to attract customers, to provide liquidity, boost the economy and to provide 24/7 service to customers. The opportunities of adopting e-banking system increased number of internet users and computer literacy capture the untapped rural market; the banks gain competitive advantage over their competitors and its good opportunity to the customers to manage their accounts at any time at any place. Finally, the possible challenge of the electronic banking was trust issue/lack of trust, low infrastructure,

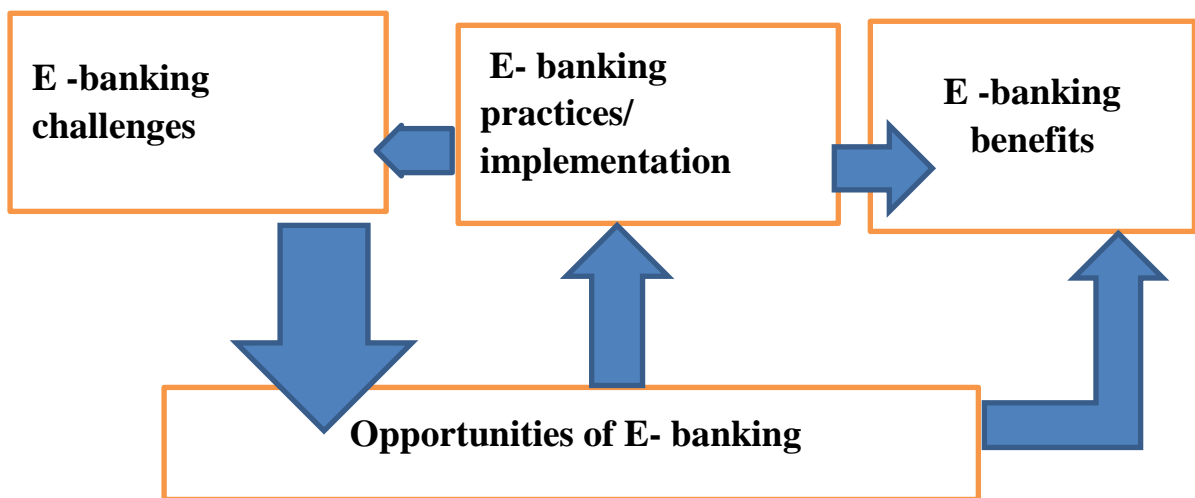
low internet penetration, low customer awareness, technical literacy, employee training, customer education, restricted business, and cost of technology was the main challenges of e-banking.

- ❖ Based on the findings(Harmanjot Kaur, Nov 2017),in the title of thebenefits and challenges of e-banking in India the main benefits of applying e-banking fast service, convenience, cost and time saving. The challenges security, regulatory, and legal issue.
- ❖ The adoption of electronic banking creates opportunities of tapping new customers segments and the possibility of retaining the existing customer /loyal customer, enhance computer and financial literacy of customers& the challenges were unfair choice of technology, improper design and protocol of network, inadequate process, operational and security risk, and low internet penetration (Dr. Puneet Bafna, 2017) .
- ❖ (Sujith T S, Opportunities and Challenges of E- Payment System in India, 2017), conducts research on Electronic payment, the risk of data theft, especially to those nontechnical individuals such as farmers and workers, the use of e-payment was also major cause of overspending, and the presence of intermediaries was among the major challenges of the Electronic financial system.
- ❖ Larsson and Vitaol (2017), finding put as, Despite the transformative potential of the digital banking system is not without challenges. The authors identified some key obstacles such as cyber securityrisk, regulatory compliance complexity and digital divide were the main challenges of e-banking but ignor to include the challenges such as low internet penetration,low internet banking connectivity,vulnerblity.
- ❖ There is significant and positive relationship between electronic banking and the concern of security of transaction, the electronic banking system improved customer service and easy to use but at the same time their problem of security or loss of money either belongs to the bank or the customers that destroy the banks reputation. Despite the security challenge the banks that use electronic banking system reduce operational costs and improve efficiency (Olaleye John Olatunde PhD, 8, August 2019)
- ❖ E-banking allows for the bank to minimize the operational costs, reduction of physical facility and staff (human resource requirements), reduce waiting time of customers to receive service and increase sales volume of customers, convenient, ease of use, user

friendly, fast delivery, and accessibility of online bill payment. simultaneously there is challenge on the implementation and application of e banking such as accessibility concern it is difficult for those not accessible for the users, difficulty to use, security concern, high cost of startup, Authentication process, legal and ethical risk.

- ❖ Sebayang, et.al (2024) summarized the e-banking concept as mode not only reduce operational costs for the banks but also empower customers to have greater autonomy over their financial activity. Channel Profitability: A study by Kasaye Alamrew (2025) found that investment in POS terminals had a significant negative effect on both ROA and ROE, suggesting that the current infrastructure and high operational costs outweigh the financial returns for some banks.
- ❖ Infrastructural and Behavioural Challenges: Recent reviews, such as one on Electronic-Banking in Ethiopia- Practices, Opportunities and Challenges (2025), consistently cite infrastructural limitations, security issues, and low financial literacy as critical challenges.
- ❖ Financial Inclusion: Research, including that cited by Jerene & Sharma (2020), in the effect of financial technology on financial inclusion in Ethiopia during the digital economy era (2024), explores the positive role of financial technology in inclusion but also notes the slow diffusion compared to other countries

2.6 conceptual frame work



Developed by researcher (2025)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction:

This chapter presents the methodological framework applied to solve the research problem and answer the research questions. It begins with by key methodological considerations such as the research design and approach, sampling of the study population and followed by chosen techniques, the data collection process and its analysis. Ethical consideration accounted in and post-data collection process is also indicated.

3.2. Research Design

The study problem was solved using descriptive research design. It involves either identifying the characteristics of an observed phenomenon or exploring possible correlations among two or more phenomena. In every case, descriptive research examines a situation as it is. It does not involve changing or modifying the situation under investigation, nor is it intended to determine cause-and-effect relationships. Strategies include sampling, making observations, interviewing take on a very different form when we want them to yield quantitative data (Copper and Schindler, 2010). According to Doyle (2004), descriptive survey design also included observation studies, correlational research, developmental designs, and survey research. All of these approaches yield quantitative information that can be summarized through statistical analyses.

Some of the main advantages of using survey designs to collect primary raw data from respondents are the ability to accommodate large sample sizes' generalizability of results; ability to distinguish small differences between diverse sample groups; ease of administering and recording questions and answers, increased capabilities of using advanced statistical analysis; and abilities of tapping into latent factors and relationships. In contrast, the main disadvantages of survey research designs tend to focus on potential difficulties of developing accurate survey instruments; inaccuracies in construct and scale measurements of factors; and limits to the depth of the data structures. In addition, researchers can lack control over long time frames and potentially low response rates, among other problems.

Cross-sectional design is viewed as being moderately low in expense and time since it just takes. so the study was conducted by using a descriptive research design. Descriptive research

design is a type of research design that is mainly concerned with describing the nature or condition or degree of the present situation. Creswell (2003), stated that the descriptive method of research design is used to gathering information about the present or existing condition. This survey was focused on the assessments of the main challenge and opportunities of the electronic Banking system in Mekelle city,so the research designis cross sectional survey research design and qualitative, the objective is simply fore ward the prospects and challenges of e banking system in commercial bank of Ethiopia operated in Mekelle City focused on main branch Mekelle city.

3.3. population and sampling design

The population of the study will be the customers of electronic banking and the sample design will non-probability sample the researcher select sample informants that conveniently found at commercial bank of Ethiopia main district office during the data collection period because its difficult to include all the users of electronic banking.

3.3.1 Sample size

- The total number of e-banking customers was too many. From those, the researcher selected 200 Electronic banking users that conveniently found in as a sample of respondents to assess the perception regarding the opportunities and challenges of electronic Banking. The sample respondents will be a hybrid of users of electronic banking. The researche use convenience sampling technique to get active e-banking users in Mekelle city in the main Branch of Commercial Bank of Ethiopia. Respondents were those who have only practiced in digital banking products to ensure that the research is active. Respondents' opinions were collected at the spot where customers use the services, like banks, around ATM, and walking customers around the main branch of CBE Main branch. Reasons to use only 200 sample respondents due to
- descriptive nature of the study aiming to identify *key* themes, perceptions, regarding opportunities and challenges. The goal is not to estimate population parameters with high precision, but to gather a preliminary understanding of the phenome State that the research is intended to provide a baseline understanding or initial insights into customer experiences, which can inform a future, more rigorous probability sampling.

- The researcher selects 200 sample informants as respondents because of the believe that beyond the stated sample is simply matter of redundancy. Thus, sample informants will be sufficient and adequate enough for analysis

3.3.2. Sampling Technique

In most of research inquiry/ investigation it was mandatory to use sample because of difficult to include all population because census survey is time consuming, unmanageable, costly, & cumbersome, to include all the customer of commercial bank of Ethiopia. The sampling technique that the researcher use was purposively select commercial bank of Ethiopia as case study due the largest customer holding and the researcher use convenience sampling technique to reach out the informants & 200 customer that uses e-banking will be selected as respondents.

3.4. Data collection instrument

The researcher was used semi structure questionnaires' data collection instruments to gain the required information about the perception of the customers about the e-banking system of commercial bank of Ethiopia regarding the challenges and opportunities of the electronic banking system brought to the enterprise. Five-point Likert scale questionnaires' will be distributed to the customers of commercial bank of Ethiopian Mekelle main district office. Data/ questionnaires, were collected for 10 consecutive days from the e banking user of commercial bank of Ethiopia at Mekelle main district office.

3.5. Data Analysis

The data that was collected from the customers was correctly coded, edited, and entered and the analysis was made using frequency tables, charts, graphs and using SPSS v 20 used to display the respondent's perception of respondents regarding the challenges and opportunities of e banking system.

3.6. Ethical Considerations

Above all, the researcher has conducted the study based on professional as well as the basic principles of research. The researcher would not been identified or present the respondents personal details and response without their consent and agreement. Ethical issues grouped into informed consent procedures, dishonesty, confidentiality towards participants and protecting the anonymity and privacy of research participants (Creswell, 2003). Based on the

basic principles, the researcher proposed a set of ethical and moral procedures and informed the participants just before filling out the questionnaire. The participants were informed that information obtained from them remains confidential. Besides, the respondents were further informed that their names would not be written or exposed in the report and would never be used in connection with any of the information they revealed.

CHAPTER 4

DATA PRESENTATION AND ANALYSIS

This chapter presents the demographic characteristics of the respondents in the first stage and in the second stage, it displays the informant's response to the research questions of the study that focused on practices, challenges, opportunities and benefits of electronic banking.

The findings of the study were presented and analysed in this chapter. The questionnaire was developed in five scales ranging from five to one, where 5 represents strongly agree, 4 agree, 3 Neutral, 2 disagree, and 1 strongly disagree. These five scales are treated as interval scales to conduct statistical analysis. Harry and Deborah (2012), stated that Likert scale data can be analyzed at the interval measurement scale. Likert scale items are created by calculating a composite score (sum or mean) from four or more Likert-type items; the composite score for Likert scales can be analyzed at the interval measurement scale. Descriptive statistics recommended for interval scale items include the mean for central tendency and standard deviation for variability.

Description of Sample

The researcher distributed 200 questionnaires for electronic banking users of Commercial Bank of Ethiopia in Mekelle city, customers found in the main district office of commercial bank of Ethiopia. The researcher distributed the questionnaires while the customers were walking & using around the main branch (Commercial Bank of Ethiopia, Mekelle district office and the researcher collected 180 of 200 questionnaires. So, 180 were used for the analysis purpose, 90% were collected the remaining 20 were excluded because 16 questionnaires were not collected (lost), and the remaining 4 not properly filled out by respondents.

According to Kothari and Gang, (2014), cited in Hassan et al. (2018); Babbie (1998), a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good, and a response rate of 70% or over is excellent; therefore, this response rate was adequate for analysis and reporting.

Demographic Characteristics of Respondents

Gender Distribution

Table 4.1

	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	Male	112	62	62	62.2
	Female	68	38	38	100.0
	Total	180	100.0	100.0	

Source: field data 2025

Table 4.1 represents distribution of respondents from the total of 180 respondents 112(62.2% approximately 62%) Were male and 68 (38 an approximate) were female, so majority of the respondents according to the above were male respondents, But this does not mean majority of e-banking users was male rather majority of the respondents of this survey that participated in filling the survey were male informant.

Age Distribution of Respondents

Table 4.2

Age	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	<24	10	5.55	5.55	5.55
	25-35	73	40.55	40.55	46.1
	36-45	66	36.6	36.6	82.7
	46-55	22	12.22	12.22	94.92
	>55	9	5	5	100.0
	Total	180	100.0	100.0	

Source: field data 2025

As Indicated in the above 4.2 Age distribution of the informants is categorized in to five categories, with majority of the respondents were at the age category of 25-35, which is 73 (40.55 %) followed by age categories of 36-45,66 (36.6%), 22 (12.22%) at the age interval of 46-55, and 10 (5.55 %) of respondents are <24, finally the remaining 9 (5%) of the respondents were 55 and above years old. Generally speaking, the Majority, the informants of this survey were within the age interval stretched from 25 to 45 years old.

Educational Level of Informants

Table 4.3

Educational Level	Frequency	Percent	Valid Percent	Cumulative Percent
certificate/diploma	42	23.3	23.3	23.3
Valid Degree	109	60.5	60.5	83.7
master and above	29	16.1	16.1	100.0
Total	180	100.0	100.0	

Source: field data 2025

The above Table 4.3 indicates that the Educational level Of respondents and from those Majority of the respondents are degree holder, 109 (60.5%), and 42(23.3%) of informants are certificate/diploma holder. Finally,29(16.10%) of the respondent's, were master's degree holders. From this the research concludes that as shown on the figure above the key informants were certificate, degree and master's degree holders, so there is no / problem of reading and understanding the concepts of e-banking. hence all most all of the participants familiarity/ know how about the electronics banking.

Table 4.4

Types of electronic banking the sample respondents use

Which e-banking products is currently used	Frequency	Percent	Valid Percent
ATM	136	75.5	75.5
Mobile-banking	125	69.4	69.4
POS	51	28.3	28.3
Internet banking	26	14.4	14.4
Other	-	-	-
Total	180	100.0	100.0

Field data 2025

Table 4.4 shows the types of electronic banking used by respondents. thus 136 (75.5% ATM banking users ,125(69.4%) were mobile-banking 51(28. %) user of point of sales/ sometimes called point of purchase and 36(14.4%) informants of the investigation user of internet banking. Totality Of the respondents was beyond the total sample size (180) due to possibility of multiple answering (any informant can tick more than one option).

Descriptive Statistics Analysis

In analyzing the data using descriptive statistics mean (average), were used to identify the average response of informants and standard deviation to see the how respondents response was varied. (Sugiyono, 2008; Munizu, 2013; Bahriet al., 2012)&Mesfin (2016), used a kind of rule of thumb to create equal intervals for a range of five points Likert scale (that ranges from strongly disagree to strongly agree in the survey questionnaire)., a mean range from 1. to 1.80, from 1..81to 2.6, from 2.61 to 3.4 and from 3.41-4.2,and 4.2 to 5.00 represented ,respondents' perception A calculated mean value that ranges from 1 to 1.80 implies strong disagreement, somewhat disagree, neutral, somewhat agree and strongly agree respectively. The 0.8 Interval served as a boundary for each elements of the measurement in the questionnaire. Accordingly, the 0.8 was a result found by dividing the difference between the maximum (5) and minimum (1) scores to the maximum score (5) of the questionnaire. In the process of examining of the data, standard deviation was used. Small standard deviations (relative to the value of the mean itself), Indicate that data are close to the mean whereas a large standard deviation (relative to the mean) indicates that the data points are distant from the Mean. Standard deviation is a measure of how well the mean represents the data ((Field, 2009).

Section II Study Related Questions

Indicate your perception as to what extent you agreed on the statement

5=strongly agree, 4=agree 3. = Moderate extent, 2= disagree 1= strongly disagree

4.2. To what extent agree on the e-banking service practices provided by the bank

Please tick one in the box

Table 4.6

Statements of e-banking practices of Commercial Bank of Ethiopia	N	Mini m	M A	Mean	Std. D
The Bank developed and implemented a user-friendly system for providing service	180	1	5	1.50	.937
The Bank gives information on its website or other media how to use electronic banking	180	1	5	2.54	.885
The e-banking services of the bank are provided by multi languages	180	1	5	3.61	.927
The Bank is improving and updating its e-banking services continuously	180	1	5	3.72	1.040
The bank provides differentiated e- banking products and services compared to another competitor	180	1	5	3.87	.966
Learning and using electronic banking service and products in the bank	180	1	5	1.95	1.003
Valid N (listwise)	180	1	5		

Source: Field data 2025

The mean of response of informants on the statement on commercial bank of Ethiopia development of electronic banking system that is user friendly is 1.50 with standard deviation of .937 (less than 1), this implies that most of the respondents were less likely/ disagree e-banking user friendly to the electronic banking users (electronics banking system which mean is not user friendly. regarding the banks release of information via website and other media options on how to use the electronic banking system, the informants reply with mean of 2.54 and standard deviation of .885 at the interval of somewhat disagree with smallest error among the respondents.

Thirdly the informant's opinion on the question /issue of e- banking and multilanguage usage the sample informants also reply with mean 3.61 and standard deviation of .927 shows the bank uses different language in provision of electronic banking system to the customers, mean of 3.61 indicates the customers were agreed /satisfied with banking system provision and its use of alternative language system. Furthermore, the bank's commitment in updating the electronic banking service in a continuous way with response mean value of 3.72 and standard deviation of 1.

Finally, the mean and standard deviation of the bank's effort ion using differentiated electronic banking service and provision of learning and usage of electronic banking on the bank display with mean of 3.87 and 19.5 with standard deviation of .996 and 1. Generally the informants' response on the-banking user friendly system, dissemination of information by bank website and other media option, and capability of bank to provide on the usage of electronic bank in the bank were item with small mean value which portrays the respondents replied as strongly disagree somewhat agree.

The variables/ question with mean of more than 2.81 shows the customers are agreed/strongly agreed with statements. the informants are agreed on statements as scaled by Mesfin 2016 with small standard deviation / small variation.

4.3. Questions related to E-Banking opportunities in commercial Bank of Ethiopia

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

Table 4.7

Electronic banking opportunities (e-banking OP)	N	Mini	Max	Mean	Std. D
The demand for e-banking services is increasing from time to time	180	1	5	3.98	.966
The habit of using e-banking services will show significant improvement in the future	180	2	5	3.96	.924
The number of educated populations is increasing in Ethiopia as at 9.	180	1	5	4.02	.840
There is strong commitment from the government to strengthen e-banking services in Ethiopia.	180	1	5	4.00	.888
There is good commitment of the government to facilitate the expansion of ICT infrastructure in the country.	180	1	5	3.97	.955
The current situation in related too long queuing line is a good opportunity to spread E-banking services to customers.	180	1	5	4.00	1.000
The current new directive of national bank of Ethiopia, which limit physical cash limit withdrawal, can be taken as an opportunity for using e-banking services.	180	1	5	4.07	.964
There will be better competition due to many new upcoming local banks	180	1	5	4.12	.937
The customers concern on security	180	1	5	2.02	1.000

E-banking provide Round the clock banking	180	1	5	2.20	.889
10.					
E- Banking facilitate online settlement of bill	180	1	5	1.86	.997
11.					
Encrypted transaction	180	1	5	2.09	.832
Denial to unauthorized access	180	1	5	3.95	.952
Valid N (listwise)	180				

Source: field data 2025

The above table 4.7 title of research explore the opportunities of electronic banking. according to the response of the survey informants, the increment demand for electronic banking from time to time have mean of 3.98 and standard deviation of .996 this truth indicator of the e-banking incorporated by the banks due to high tendency of user in using e-banking. Based on the researcher survey the habit of improvement e-banking user from time to time the average response is mean of 3.96 and standard deviation of .924 majority of respondents strongly agreed on the idea there is significant improvement from time to time in number of electronic banking users.

Concerning the increasing the number of educated people in Ethiopia they reply that strongly agreed at mean value of 3.82 and standard deviation of .884.in addition to thus the sample respondents have agreed and strongly confirmed that governments commitment on strengthen e-banking, Commitment on IT infrastructure, longer waiting of queuing line of customers and new directives outline by the government on physical cash withdrawal limit were also main key opportunities of Electronic banking system with mean of 4.00,3.88,4.00 4.07 and standard deviation of .888,.995.1.000and .964 respectively.

Finally use of electronic banking system for better competitive advantage with rival score mean of 4.12 and .973 but customers security concern, round the clock baking, online bill processing and encrypted banking service were found to be with mean 2.02,2.20,1.86 and 2.09 with standard deviation of 1,887,.997 and .832 which mean the sample survey

respondents were disagree and somewhat disagree with those above mentioned opportunities of electronic banking beside this the sample survey respondents strongly agreed with e-banking opportunity of denial to unauthorised access with a mean score of 3.95 and small standard deviation of .952.

previous researcher also found that E- banking service such as Legal frame works that enforce-banking industries to expand technological innovation, Commitment of the government to strengthen the-banking industry, the existence of high demand, and Improvement in the-banking habit of the society were among the main opportunities of e-banking (Saba Hailu ,2024). Keshawn (2016) also outlined all most consistent finding, identified operational and services benefits from adopting and developing of E-banking technology such as increase productivity, reduces paper work, reduce transaction cost, generate foreign currency, increase reliability and reducing errors as operational benefits and facilitate development of new products, facilitates marketing and market access, improve customer service, reduce long queues in banking halls, increase accessibility of the bank services, create good relation among bank and clients.

4.4. The challenge of electronic banking

Table 4.8

Challenges of electronic banking	N	Minimum	Maximum	Mean	Std. D
Customers have less confidence and trust on the bank “s security issue of electronic banking service giving by the bank.	1	1	5	4.04	.878
Security issues and Fear of fraud hinders customers to practice e-banking services. (E.g. loss of ATM car	1	1	5	4.07	.823
Customers resist to change due to the perceived complexity of new technologies compared to conventional ways of banking	1	1	5	4.05	.940
The charge of e-banking service for bank’s customer is relatively expensive eg ATM service charge	1	1	5	3.96	1.003
Bank has not well-trained work force to build and maintain e	1	1	5	3.93	.972
Management of the bank has not been devising and imple others) for solving fraud and erroneous transactions	1	1	5	4.01	.943
There is lack of sufficient and appropriate maintaining capac e-banking service.	1	1	5	3.98	1.002
The bank is not giving E-banking service easily for its custo in short period of time	1	1	5	4.08	.910
There is no sufficient government support that affect willing	1	1	5	2.16	.853
There is no sufficient government policy framework for the implementation and growth of e-banking service in Ethiopia.	1	1	5	1.11	.920

There is lack of sufficient public awareness and literacy rate in Ethiopia	1	5	4.03	.903
There is lack of legal and regulatory frame work to manage e – banking dispute	1	5	4.10	.837
Lack of inter banking connectivity to facilitate e-banking	1	5	4.15	.832
Lack of unreliable power and internet connectivity	1	5	4.26	.780
Use of outdated software by the bank	1	5	4.20	.757
The customer fear because of Scammers innovation of related websites (fraud by scammers)	1	5	3.86	.899
There is no provision for cash deposits. You must visit your nearest bank branch or cash deposit machine to deposit money.	1	5	4.13	.872
Valid N (listwise)				

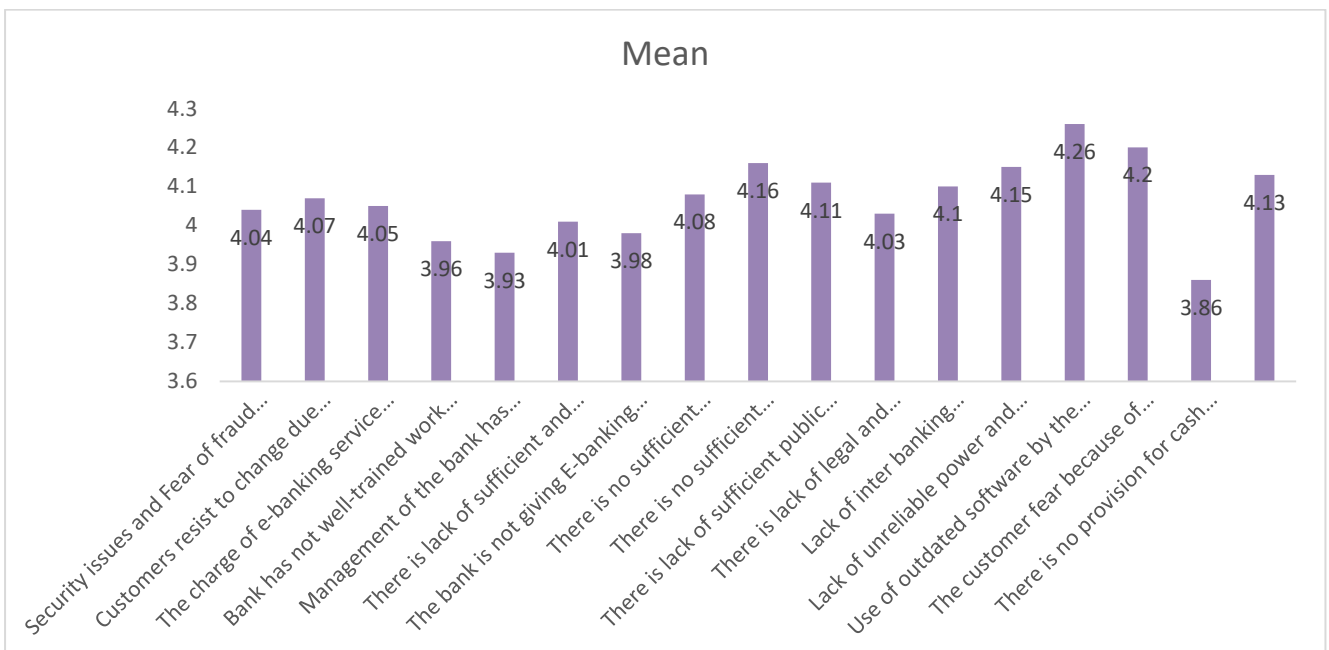


Figure 4.1

Table 4.8 above portrays the challenge that negatively affects electronic banking users in applying the system, as well as the intention of customers to use it. customers have less

confidence and trust in using the electronic banking system, with a mean of 4.04 and a standard deviation of .887. This means the sample informants strongly agreed that the user low level of trust/ fear and hesitation to use electronic banking. another obstacle user electronic banking in Commercial Bank of Ethiopia, Mekelle district, according to informant's were fear of fraud and security concern, the electric banking users have great doubt one-banking fraud activities with mean response of 4.04 and standard deviation of .823 which mean that the informants strongly agreed with the security and fear of fraud.

The customer or user of electronic banking resistance to use it/fail to adopt the-banking changing service system/e-banking due to the perceived complexity of the system by comparing with conventional banking system, also score with highest mean 4.5 and standard deviation of .940 which tell us if the user perceived to be e-banking is complex and sophisticated to use, the user fails to use the full benefit packages of e-banking.

The challenges of electronic banking were not only limited to the above-mentioned variables. Higher fee charge on electronic banking services, lack of well-trained technical work force, lack manages effective control mechanisms (MIS audit and others) for solving fraud and erroneous transactions, there is lack of sufficient and appropriate maintaining capacity up on failure is a challenge for the smooth practice of e-banking service, the bank is not giving E-banking service easily for its customers (E.g. provides fast services and produce ATM card in short period of time were the challenges of electronic banking system with 3.96,3.93,4.01,3.98,4.08 Of Mean and 1,0.972,0.943,1, 0.916 standard deviation respectively they strongly confirmed the above variables were the key challenges of electronic banking system.

Furthermore, the lack of sufficient government support that affects customers' willingness to use technological innovation was a mean of 2.16 and a standard deviation of 0.853, which shows the sample respondents disagree with the insufficient government support to technological innovation that affects customer willingness to use e-banking. Lack of sufficient government policy framework for the growth of e-banking means of 1.1 and .920, the effect is minimal on e-banking. lack of public awareness and literacy of customers one-banking, lack of legal and regulatory frame work to solve financial and transaction dispute, lack/weak interbank connectivity unreliable power and internet, use of outdated software, scammer use

the same platform forms, lack of feature to cash deposit with mean of 4.03, 4.1, 4.15, 4.26, 4.2, 3.86 and 4.13 standard deviation of 0.903, .837, 0.0874, 0.780, 0.757, 0.899 and 0.873 respectively thus the above mentioned variable/statements were recorded with maximum mean score and small error among them, the sample respondents strongly agreed and confirmed as main challenges of electronic bank system.

The key finding on the challenges of e-banking in this investigation were similar with the findings of Saba hailus (2024) findings that she conducted research on challenges and opportunities of e-banking in Addis Ababa district, according to Saba(2024) the challenges in implementation of e-banking in commercial banks of Ethiopian Addis Ababa district were high cost of implementation of the E-banking system, lack of customer awareness, lack of sufficient government support, legal and regulatory differences and lack of trust, but focus of this research were on bankers perspective.

Supportive evidence for this was conducted in Ethiopia on Challenges and Opportunities of Electronic Banking in Ethiopian Banking Industry by Kassahun (2016) indicated that, the major challenges Ethiopian banking industry faces in the adoption and development of E-banking technology are, high cost of implementation of E-banking, lack of customer awareness, limitation in network infrastructure and internet related support services, low levels of computer literacy, low level of ICT infrastructure, lack of sufficient government support, legal and regulatory differences with cross-country security risk and lack of trust. So the researcher concludes that the challenges faced in delivering e-banking were supported by empirical evidence.

4.5 Benefits of electronic banking

Table 4.9

Benefits of electronic banking	N	Mini	Maxi	Mean	Std. D
the E- banking service conveniently wide variety of service (beyond working hours, in holidays,	180	1	5	3.98	.966
E-banking reduce the expenses / cost efficient	180	2	5	3.96	.924
E-banking reduce cycle time of banking service	180	1	5	4.02	.840
E bank minimum/no error in recording account transactions	180	1	5	4.00	.888
E-banking service put Your money is safe.	180	1	5	4.00	1.000
E-banking can make online purchases with ease of use	180	1	5	4.07	.964
E-banking provided a proof of payment (eg electronic receipt)	180	1	5	4.12	.937
E- banking You can constantly track your account and check account balances from anywhere, at any time. You can get mini statements or download account statements	180	1	5	4.07	.928
Mobility (E-banking service via mobile-banking at any place no need to visit ATM or bank	180	1	5	3.84	.856
You can pay utility bills like electricity, telephone, gas, and other from the comfort of your home and enable auto-debit options never to miss a payment.	180	1	5	2.62	.789

Source: field data 2025

The researcher also explores the benefits of applying and implementing electronic banking system both by banking industry and customers of electronic banking, among them e – banking conveniently gave wide variety of service and distinguishing feature of e-banking mean that can serve users even on holy days, at Night, during non-working hours sample respondents strongly agreed on with mean score of 3.98 and standard deviation of .996. this implies that sample respondents confirm e-banking wide variety of service is appropriate and key for both user satisfaction and banking industries operation.

Use of electronic banking reduces the expense incurred by customers to get service from conventional banking service/ cost cost-efficient, with a mean value of 3.96 and a standard deviation of 0.924. The sample survey of this investigation strongly agreed that e-banking have dramatically reduced the monetary and non-monetary outlays incurred to receive conventional banking service

Electronic banking and cycle time of service mean of 4.02 and standard deviation of 0.84 finding of this investigation reveals that e-banking service significantly reduce time taken to got service (time lost in a longer queuing / waiting line) hence e-banking is blended service with queuing such as ATM, POS and Virtual like mobile and internet banking the cycle time to serve is minimum.

The electronic banking system is with minimum errors in recording account transactions due the automatic recording of each and every service, put customers money safe (reduce cash carrying/pocket money, make online purchase, provide electronic receipt/proof of payment in every transaction the made, possibility of updating and tracking account, and facilitate service without need to visit bank branches in person. the sample respondents have strongly agreed on the statements mentioned above with mean of more than 3.86. beside this facilitating utility payment were among the main benefits of electronic banking system in theoretically, but based on mean score of this sample survey respondents replied with mean score of 2.68 which somewhat disagree.

Chapter five

Summary of key findings, conclusion, and recommendation

This study was intended to assess the practice, challenges, and opportunities of the E-banking system in the Commercial Bank of Ethiopia, Mekelle district in the Mekelle city main branch. The purpose of this chapter is to describe the summary of findings, followed by a conclusion, and present recommendations.

5.1 Summary of key findings

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

- ❖ According to the investigation of this research majority of sample respondents were male respondents with highest age category 25 -45 and all respondents were ability to read and write (certificate/diploma, degree and above) this implies sample survey informants were basic understanding to fill out the question that were distributed to them.

The key findings on the basic opportunity of electronic banking as found by this research investigation presented as follow

- ❖ the demand for e-banking were at increasing rate from time to time according to respondent's response
- ❖ habit of using e-banking have shown significant improvement in the near future
- ❖ increased number of Ethiopian educated people and this could easily rectify the illiteracy rate and reluctant of citizen to use electronic banking
- ❖ the strong commitment of the government to strength e-banking for effective and efficient regulation and monitoring of financial position of the nation

- ❖ good commitment of the Ethiopian government for the expansion and operationalization of ICT infrastructure in country and this accessibility of IT could enhance effective execution of e-banking
- ❖ too long queuing line of conventional banking system can motivate individuals to use electronic banking system so as to save the time consuming on the line & cost of travel
- ❖ new directive of national bank operation such as physical cash withdrawal limit, mandatory to facilitate procurement and purchasing activity vi e-banking /ban cash transaction
- ❖ e-banking uses a tool as better competitive weapon with rival banks
- ❖ e-banking provision of round the clock service
- ❖ Denial of unauthorized account

➤ **Challenge of e-banking**

The main challenges of electronic banking system based on this research paper

- ❖ Customer of electronic banking system have less confidence and trust on e-banking system
- ❖ Security issue and fear of fraud hider customer from usage of electronic banking
- ❖ Perceived complexity of e-banking system (user is perceived the e-banking system was to complex and sophisticated to use
- ❖ High cost of charge /fee by the bank when the customers were using the e-banking
- ❖ Lack of effective monitoring and control mechanism (MIS and auditing)
- ❖ Lack of sufficient and appropriate maintenance capacity when failure occur eg if ATM card lost on the Machine, it takes longer time to replace.
- ❖ Lack of legal and regulatory frame work to resolve/Manage financial and transaction dispute
- ❖ Lack of inter banking connectivity
- ❖ Unreliable electric power and weak internet penetration
- ❖ Use of outdated soft were by the banks while delivering e-banking service
- ❖ Scammerhacked the-banking system and innovate same platform and distort customers simultaneously they took their money and banks were fail to aware early.
- ❖ Providing weak password can leave it suspect able andvulnerable to internet fraud.

- ❖ There is no provision of cash deposit / e-banking lacks feature to deposit cash only serve for cash transfer, withdrawal and e payment

With regard to the Benefits of e-banking

The e electronic banking system provide wide variety of service beyond working hours I,e during holiday, before and after working time, provide service at minimum cost, reduce transaction error and mistakes, provision of bank service with minimum cycle time, safe , facilitate E-purchasing,satisfy customers with speed of service, updating account balance(easily tracking at any time and any place, provide proof of payment (providing electronic receipt) and the customer can take place payments(mobile and internet banking) without visiting the bank branch.

5.2 conclusion

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

Concerning opportunities of e-banking. The electronic banking system brings a lot of opportunities and benefits for the bank and customers like increasing habit of customers to use e-banking, according the sample respondent's response the National government of Ethiopia played great role on by establishment of directive and guideline of e-banking like limiting cash withdrawal, commitment of efforts on expansion of ICT infrastructure, denial of unauthorized access, and provision of speed and convenient service were among the main opportunities of electronic banking. and also beyond the opportunities electronic banking play important role on customers by better provision of service at minimum cost, reduce transaction error and mistakes, provision of bank service with minimum cycle time, safe, facilitate e purchasing, satisfy customers with speed of service, updating account balance(easily tracking at any time and any place, provide proof of payment (providing electronic receipt) and the customer can take place payments(mobile and internet banking) without visiting the bank branch. Although the e-banking system also with lots of challenges and obstacles to be named lack of reliable power and weak internet penetration, fear of security and lacks of trust of customer on the system, fraud and scamming, lack of legal and regulatory frame of e-banking to resolve dispute, lack/poor inter banking network connectivity, providing weak and suspect able password for e-banking users, use of outdated software by the bank was among the challenges of e-banking.

5.3. Recommendation

- ❖ Create awareness on customers that the e-banking is easy to use, fast and convenient and safe to avoid the fear and worry of customers
- ❖ The bank should build strong e-banking network connectivity to provide fast, reliable and convenient e-banking service to customers
- ❖ The bank should monitor and track the online-banking system to protect unauthorized access of scammers and to avoid/reduce financial fraud and update with new information to customers via social media, SMS or main stream media channels to aware
- ❖ Provide strong PIN and pass word to e-banking users that is not vulnerable and easily suspect able or teach to e-banking users to change their password with strong code and not to show to anyone.
- ❖ The bank use block chain security protection tool such as bio metric authentication methods, facial recognition and fraud detection to meet regulatory frame work, strengthen cyber security defence and build lasting trust with customers.
- ❖ Enhance regulatory capacity of the bank in collaboration and coordination with government to solve-banking disputes related with e-banking with shortest possible time
- ❖ Quickly obtain feedback on taking complaints and suggestions of the customers in order to improve the service and increase customer satisfaction.
- ❖ Periodically control of the ATM network and power supplies and provide it with sufficient amount of cash.
- ❖ Update the software on a regular base in order to avoid interruptions of services.
- ❖ Maintain and clean the machines (Relevant only ATM).
- ❖ Distribute the machines and devices to an expanded area.
- ❖ Develop the habit of working cooperatively and Encourage customers using e-banking by reward and tariff discount.

- ❖ banks should continuously endeavour to persuade, enlighten and instruct their clientele to accept and utilise e-banking technologies. Furthermore, customers must also try to acquire the requisite knowledge and skills to utilise this modern channel to distribute products and services.

5.4 Limitation of the research

The research was limited first in the scope it only assessed in 180 E banking customers of commercial bank of Ethiopia and upcoming researcher should include other banks at the for multi firm evaluation, second the data collection tool that used by the research was limited to only questionnaires', the reliability of the data was up on the informants response, and then the research is studied only perception of the respondents, not the actual output of E banking.

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**Appendix1 Questionnaire
Instrument of Data Collection – Questionnaire**

**Questionnaires on: Assessment of opportunities and challenges of the electronic
banking system in the Commercial Bank of Ethiopia at main district office in Mekelle
city**

Mekelle- University

Collage of Business and Economics

Department of Management

Dear respondents,

I am presently engaged in research to find out on Assessment of opportunities and challenges of e-banking in the Commercial Bank of Ethiopia at the main district office in Mekelle city. In order to assess, I designed a questionnaire and distributing it to you seeking your response. I really appreciate your participation which will contribute to my successful completion of this programme. This questionnaire will take approximately 20 to 30 minutes of your precious time. Please note that any information that you provide will be treated in confidential manner and will only be used for research purposes. Your participation in the study will be greatly appreciated. Thank you very much for your time.

Section 1 General Profile of Respondents

Please attempt to answer all the questions and tick one appropriate letter that best suits your perspective for each statement.

1. Gender Male . Female

2. Age <24 25-35 36-45 46-55 >55

3. Educational experience: Certificate Diploma Degree Masters& Above

6	Learning and using electronic banking service and products in the bank					
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6. Part 2: Questions related to E-Banking opportunities in the Commercial Bank of Ethiopia

1. Strongly disagree 2. Disagree 3. Neither nor/neutral 4. Agree 5. Strongly agree

No,	Opportunities of e-banking	1	2	3	4	5
7.	The demand for e-banking services is increasing from time to time.					
8	The habit of using e-banking services will show significant improvement in the future					
9	The number of educated populations is increasing in Ethiopia as an opportunity for the growth of e-banking					
10	There is strong commitment from the government to strengthen ebanking services in Ethiopia.					
11	There is good commitment of the government to facilitate the expansion of ICT infrastructure in the country.					
12	The current situation in related too long queuing line is a good opportunity to spread E-banking services to customers.					
13	The current new directive of national bank of Ethiopia, which limit physical cash limit withdrawal, can be taken as an opportunity for using e-banking services.					
14	There will be better computation due to many new upcoming local banks					

15	The physical cash limit imposed by government increase adoption and implementation of e-banking					
16	The customers concern on security					
17	E-banking provide Round the clock banking					
18	E- Banking facilitate online settlement of bill					
19	Encrypted transaction					
20	Denial to unauthorized access					

Part III. Challenges of Electronic Banking

	E-banking challenges	1	2	3	4	5
21	Customers have less confidence and trust on the bank 's security issue of electronic banking service giving by the bank.					
22	Security issues and Fear of fraud hinders customers to practice e-banking services. (E.g. loss of ATM card)					
23	Customers resist to change due to the perceived complexity of new technologies compared to conventional ways of banking					
24	The charge of e-banking service for bank's customer is relatively expensive eg ATM service charge					
25	Bank has not well-trained work force to build and maintain e-banking system					
26	Management of the bank has not been devising and implementing effective control mechanisms (MIS audit and others) for solving fraud and erroneous transactions					

27	There is lack of sufficient and appropriate maintaining capacity up on failure is a challenge for the smooth practice of e-banking service.					
28	The bank is not giving E-banking service easily for its customers (E.g. provides fast services and produce ATM card in short period of time					
29	There is no sufficient government support that affect customers willingness to use technological innovation					
30	There is no sufficient government policy framework for the implementation and growth of e-banking service in Ethiopia.					
31	There is lack of sufficient public awareness and literacy rate in in Ethiopia					
32	There is lack better competition with local banks and foreign banks are prohibited to operate in Ethiopia					
33	There is lack of legal and regulatory frame work to manage e – banking dispute					
34	Lack of inter banking connectivity to facilitate e-banking					
35	Lack of unreliable power and internet connectivity					
36	Use of outdated software by the bank					
37	The customer fear because of Scammers innovation of related websites (fraud by scammers)					
38	Not securing your account with strong passwords can leave it susceptible and vulnerable to internet fraud.eg simple password, forgetting to logging out of mobile and internet banking					

39	There is no provision for cash deposits. You must visit your nearest bank branch or cash deposit machine to deposit money.					
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Part iv: benefits of E- banking

38	The E-banking service conveniently a wide variety of services (beyond working hours, on holidays,	1	2	3	4	5
39	E-banking reduce the expenses/cost efficient					
40	E-banking reduce cycle time of banking service					
41	The E-banking improves level of satisfaction					
42	The E-banking service available 24/7					
43	E bank minimum/no error in recording our transaction					
44	E-banking service put Your money is safe.					
45	The e-banking service get your money faster with no check-cashing.					
46	E-banking can make online purchases with ease of use					
48	E-banking provided a proof of payment (eg electronic receipt)					

49	E- banking You can constantly track your account and check account balances from anywhere, at any time. You can get mini statements or download account statements					
50	E- banking reduce bureaucratic burden of user (signature mimach, brought of customer book,					
51	Mobility (E-banking service via mobile-banking at any place no need to visit ATM or bank					
52	You can pay utility bills like electricity, telephone, gas, and other from the comfort of your home and enable auto-debit options never to miss a payment.					

Thank you for your patience in responding to the above questions!!