

**EFFECT OF DIGITAL BANKING ON CUSTOMER
SATISFACTION: THE CASE OF
COMMERCIAL BANK OF ETHIOPIA IN ADDIS ABABA**



**ADDIS ABABA UNIVERSITY
SCHOOL OF COMMERCE
DEPARTMENT OF MARKETING MANAGEMENT**

By

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JUNE 2023

ADDIS ABABA, ETHIOPIA

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ID GSE/6900/12

*A THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY, SCHOOL OF
COMMERCE IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE
MASTER OF ARTS DEGREE IN MARKETING MANAGEMENT*

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DECLARATION

I, Eyasu Fekadu, the undersigned person declare that the thesis entitled “*Effect of Digital Banking on Customer Satisfaction: the Case of Commercial Bank of Ethiopia in Addis Ababa*” is my original and submitted for the award of Master Degree in Marketing Management, Addis Ababa University at Addis Ababa and it hasn’t been presented for the award of any other degree. Under this study, fellowship of other similar titles of any other university or institution of all sources of material used for the study has been appropriately acknowledged and notice.

Eyasu Fekadu,
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Signature

Date

CERTIFICATION

This is to confirm that Mr. Eyasu Fekadu, has appropriately finished his research work entitled “*Effect of Digital Banking on Customer Satisfaction: the Case of Commercial Bank of Ethiopia in Addis Ababa*” with my supervision through the time. In my suggestion, his task is appropriate to be submitted as a partial fulfillment requirement for the award of Degree in Master in Marketing Management.

Research Advisor

Mulugeta G/Medhin (PhD)

Signature and Date

ACKNOWLEDGEMENTS

Mulugeta G/Medhin, PhD, Addis Ababa University is my advisor, and I would like to thank him for his patience and the outstanding help I received throughout the entire research study process. I appreciate his enlightening comments on the primary topics of the work and during the many years of preparation. Additionally, I would like to thank the management and experts at Commercial Bank of Ethiopia for their cooperation in gathering data. Additionally, I would like to convey my gratitude to all the managers, business experts, staff members, and other people who kindly agreed to take part in this study. I also want to express my gratitude to my friends and co-workers for their inspiring words. The last thing I want to do is forget to thank my family and relatives for supporting me throughout this long and difficult trip.

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ABBREVIATIONS/ACRONYM

CBE – Commercial Bank of Ethiopia

ICT - Information and Communication Technology

IS – Information System

IT - Information Technology

TAM - Technology Acceptance Model

TPB - Theory of Planned Behaviour

TRA - Theory of Reasoned Action

SPSS - Statistical Package for Social Sciences

ABSTRACT

This study examined the effect of digital banking on customer satisfactions of Commercial Bank of Ethiopia in Addis Ababa using explanatory and descriptive research designs. The population was approximated and totalled up to 95,000 clients identified in six branches throughout three sub cities in the Addis Ababa City Administration. Explanatory and descriptive research designs were utilized for this study. For the study region in CBE, sample size was estimated using the single population proportion formula utilizing the sample size (n) of an infinite population (calculated as 384) and the following assumptions: 95% confidence level, 5% margin of error, and proportion of 50%. The use of a structured questionnaire and interview checklist together with stratified sample methodology was adopted for data gathering. Six active branches that serve electronic banking applications were the foundation for stratified. This study similarly used non-probability sampling, and the existing responder was chosen using a handy sampling procedure. Testing was done on the validity and dependability of the research equipment. Additionally, descriptive statistics, a correlation matrix, and a multiple linear regression analysis were used as part of an inferential and descriptive data analysis technique. Thus, in this trial, a response rate of 84% was achieved. Furthermore, it was discovered that customer satisfaction will be significantly and favourably impacted by security, speed, system availability, ubiquity, and control. Thus, this study concludes that security, speed, system availability, ubiquity, and control will all contribute to customer satisfaction. The report also suggests that banks make some steps to ensure data security and confidentiality. The corporation is expected to offer a greater assurance of data security and confidentiality. It should be expected that banks will be able to work on updating the current database system to make it easier for users and shorten the time it takes to conduct transactions in the banking industry.

Keywords: Banking, Commercial Bank, Customer Satisfactions, Ethiopia, Mobile Banking

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

Technology and the internet are now more prevalent in our daily lives and are taking on greater significance. A revolution in electrical technology is currently taking place, mainly in the phone, information, and communications industries. A number of services for the Internet have been made possible by the widespread acceptance of digital services across all socioeconomic segments and age groups (Emad, 2021). Most banks are now accessible through online services, and internet banking is already well-known and accepted on a global scale. This presents banks with new business and service opportunities as well as challenges to thrive in the financial market and survive. Customers can use these E-services to check their bank accounts with only one click and an internet connection (Serrah and Maideen, 2022).

A multitude of factors, such as advertising, word-of-mouth, brand recognition, location, pricing, and the needs and values of the target market, influence modern marketing services. Advertising, direct mail, sales promotion, websites, internet communication, and sales campaigns are all examples of marketing communication, according to Widayat, Ilyas, and Novita (2020). A direct conduit for using banking services such as money transfers, electronic alerts, phone banking, online banking, etc. is known as digital banking. It can be adjusted to the technological preferences of the consumer. This concept spreads and solidifies throughout the entire global corporate environment. As a result, consumers may now lower their service costs and run their enterprises efficiently and autonomously thanks to the expansion of digital banking services and other service types including mobile banking, online banking, and automated teller machines (ATMs) (Serrah and Maideen, 2022).

One of the most important services that the banking industry has lately learned to employ to boost banking user satisfaction by offering more useful and easy services is digital banking, which can be simply and efficiently achieved (Widayat, et al., 2020). Additionally, its high quality serves as the foundation for encouraging the secure purchase, sale, and delivery of products and services on the Website or online generally. It demonstrates that the quality of the

E-service increases with increased dependability and safety. By improving the quality of the online platform, digital banking is one of the services that are increasingly needed to deliver superior customer service and increase customer satisfaction (Perera & Priyanath, 2018). Customers are demanding more frequently present while the service is being produced and therefore views and in many cases, is involved in the production process. For the reason that banking services often are produced and consumed at the same time, mass production is near impossible from businesses, and businesses must put in more effort to achieve them (Khokhar, Laghari and Lakhani, 2019).

Although almost all of Ethiopia's financial institutions use digital banking systems, their operational effects on client services have not yet been fully understood, particularly in the Ethiopian setting. In the Ethiopian environment, digital banking products and services were acquainted and operationalized by all banks a few years ago. The pioneer of the digital banking service started offering these services to its clients in 2008, however. Only 27% of the customers of the 26 commercial banks in the nation at the time used electronic payment methods to conduct mobile banking transactions; the remaining 63% did not use electronic payment methods. Additionally, only 41.3% of all commercial banks' customers used electronic payment methods in the same year (NBE, 2021).

Ethiopia struggles with low financial revenues and makes an effort to enact rules and legislation that support and promote the banking industry. This is so that productive work can be accomplished, which fundamentally calls for recognizing client demands and analyzing the mobile application aspects influencing their level of satisfaction (Gofe and Tulu, 2019). Customers' satisfaction is also recognized as a critical differentiator in a market where businesses fight for their business, and it has quickly developed into a key component of any company's business strategy. Therefore, addressing the issue of consumer satisfaction with banks is important and requires research that takes operational aspects of mobile banking into account.

By developing its platform, it was one of the first banks in Ethiopia to offer digital banking, and customers still heavily rely on it. The investigation was conducted under the aforementioned conditions in Addis Ababa, Ethiopia. It's important to keep in mind that Commercial Bank of Ethiopia, the largest bank in the country, is also one of the largest commercial banks in Ethiopia.

1.2. Statement of the Problem

The Commercial Bank of Ethiopia (CBE) had 1464 branches as of June 30, 2022, 841.2 billion Birr in total deposits, 775 billion Birr in total outstanding loans, 912 billion Birr in total assets, and more than 41,000 permanent and 24,000 contract employees. The Commercial Bank of Ethiopia (CBE) currently offers customers a variety of easy online services. Through electronic channels, CBE offers a variety of banking services, including CBE Birr, Transfer Money, Cash Out, Buy Airtime, Buy Goods, Pay Bill, Check Balance, Others, ATM, Forex ATM, Mobile Banking, Internet Banking, and Point-of-Sale (POS) Terminal. However, the Commercial Bank of Ethiopia's annual report for 2021 stated that it will experience numerous issues as a result of these internet services and the increasing number of customers using e-banking. In addition, the National Intelligence and Security Service (NISS) stated that it had apprehended thieves who attempted to steal US\$110 million from the Commercial Bank of Ethiopia in Addis Ababa.

This illustrates that security is some of the main concerns that users of CBE's online banking service have. A bank lost millions of dollars due to a single technical problem that caused it to go down for just one day. Because CBE mainly relies on its online platforms, it has also suffered huge losses. In contrast, firms must pay particular attention to service quality as the most crucial aspect of competitiveness if they want to outperform their rivals. This is especially true in the service sector (Khokhar et al., 2019).

In addition, traditional banking habits, the major barriers to adopting online banking were customer preference for traditional ATMs and a bank branch, as well as a lack of confidence or skills. Nevertheless, the number of online banking users has increased by around 54.2 in 2022, compared to 41.7% in 2016 in CBE, even though, there are a lot of people who haven't enough confidence and knowledge to use online banking and still sticking to the traditional banking habits (CBE, 2022). It also increased the number of its mobile card users by 2.6 million and that of mobile banking users by 3.4 million. Similarly, 4.5 million more customers began using the CBE-Birr service, recruited by the bank's agents and branches.

Customers' preferences for conventional ATMs and bank branches, in addition to a lack of confidence or expertise, were the main obstacles to the adoption of online banking. However, the percentage of people using online banking has climbed by almost 54.2 in 2022, compared to

41.7% in 2016 in CBE, even if many people still adhere to traditional banking practices because they lack the confidence and knowledge to utilize online banking (CBE, 2022). Additionally, it had a 2.6 million increase in mobile card users and a 3.4 million increase in mobile banking users. Similar to this, 4.5 million more users of the CBE-Birr service started doing so after being attracted by the bank's agents and branches.

The majority of prior studies (Emad, 2021) also concentrated on consumers' perceptions of mobile applications in general and their attitudes, adoption, and intentions toward them. In the context of Internet banking, Rahi, 2019; Alghizzawi, Rahi, and Khan (2020) concentrated on the extension of technology with task technology fit (TTF). Previous studies did not focus on security, and speed of ubiquity of digital to prevent the bank system from fraudsters. They can now steal money from a person's account covertly and with less physical threat than in the past by simply using internet banking to search for any personal information. This study uses banking technology to fill in gaps in online financial transaction activities with only one click, such as gathering up-to-date information about their financial needs.

1.3. Research Questions

1.4.2 Sub Research Questions

- What is the effect of the security of digital banking on customer satisfaction at the Commercial Bank of Ethiopia?
- How does the speed of digital banking affect customer satisfaction at the Commercial Bank of Ethiopia?
- To what extent does the ubiquity of digital banking affect customer satisfaction at the Commercial Bank of Ethiopia?
- What is the effect of the system availability of digital banking on customer satisfaction at the Commercial Bank of Ethiopia?
- To what extent does the control of digital banking affect customer satisfaction at the Commercial Bank of Ethiopia?

1.4. Objective of the Study

1.5.1 General Objective

The general objective of the study is to examine the effect of digital banking on customer satisfaction at Commercial Bank of Ethiopian in Addis Ababa.

1.5.2 Specific Objectives

- To examine the effect of the security of digital banking on customer satisfaction at the Commercial Bank of Ethiopia.
- To examine the effect of the speed of digital banking on customer satisfaction at the Commercial Bank of Ethiopia.
- To examine the effect of the ubiquity of digital banking on customer satisfaction at the Commercial Bank of Ethiopia.
- To examine the effect of system availability of digital banking on customer satisfaction at the Commercial Bank of Ethiopia.
- To examine the effect of control of digital banking on customer satisfaction at the Commercial Bank of Ethiopia.

1.5. Significance of the Study

This study has shown that the effect of digital banking on customer satisfaction at Commercial Bank of Ethiopian in Addis Ababa. This study will equip managers with the requisite knowledge and guide them to make an informed decision on adoption of digital banking strategies. Resource allocation is a critical function of management and firms derive their success from the way they utilize their scarce resources. The findings from this study will assist CEOs and firm managers to identify and allocate resources on marketing platforms and strategies with the greatest positive impact on the performance of the organization. It enables consumers to save money, make and receive payments under more amiable and accessible conditions, and it aids in the competent provision of fundamental financial services. It assisted investors, shareholders, and managers in understanding, anticipating, and responding to significant changes in alternative payment systems and business requirements.

The results of this study project and report can be used to educate those working in the banking or financial industries as well as the banking industry as a whole and specific member of financial institutions. By assessing whether a bank's profits and growth will benefit from adopting digital banking financial systems and producing a professional report to share the findings with the banking sector community, the industry, individual organizations, and management of those individual organizations will be better informed about diversifying methods of accepting the banking sector by including digital banking applications as an acceptable platform.

By comparing the financial data of the companies before and after the use of these applications to the financial data in the financial periods following the release of these applications, this study helps to collect the data needed to determine whether the use of digital banking financial transactions applications has an impact on company growth. It also determines whether and how using such digital banking applications has an impact on financial growth. The findings of this study can be used in a variety of settings, including business dealings, marketing strategy, and instruction. The study can be used as evidence of how the banking and other financial businesses are being impacted by technology as it develops so quickly. Due to the information it would provide regarding the characteristics of many presentations, the study will also be helpful to prospective users of digital banking financial transaction applications.

1.6. Scope of the Study

This study strengthens the link between financial transactions and the general populace that is excluded from financial services. Due to this, there are three main research focuses in this study, including conceptual and methodological focuses.

1.7.1 Conceptual Scope

The study's major focus was on the operationalization of the Ethiopian digital banking system's applicability in terms of system availability and related difficulties. It was active in digital banking in financial transactions that benefited society, employees, and customers. This study is mainly focused on interactive banking applications for mobile devices that have increased client engagement, activity, and control. It mainly focused on the banking electronic systems that may be accessed through digital banking financial transaction applications. This is because the variety

of digital banking services for which banks have created mobile applications and if adding new platforms would improve the impact of those applications on digital banking financial transactions are both useful information for banks. The possibility banks will experience higher profitability and growth increases with the number of digital banking financial applications that a banking system is accessible to. Thus, it focused on five independent variables including security of digital banking, speed, ubiquity of digital banking, system availability and control of digital banking and customer satisfaction as dependent variable.

1.7.2 Methodological scope

This study tested the effect of digital banking on customer satisfaction financial. Thus, it used descriptive and explanatory research strategies. The causal effect of digital banking on customer satisfaction financial was investigated via explanatory research design. This study primarily used quantitative and qualitative research methods. It used a well-designed five-point Likert scale questionnaire with closed-ended and/or open-ended questions and an in-depth interview to use a systematic research strategy for gathering data from a representative sample of people. In the study, the relevant annual reports of commercial banks and the national bank of Ethiopia were used, together with primary (questionnaire and interview) and secondary data sources. Last but not least, this study used data from a small sample of bank employees—both male and female—bank managers, and financial players active in the sector in the study locations.

1.7.3 Geographic scope

The scope of this study was remained geographically within Addis Ababa, the capital city of Ethiopia. This study was concluded in Addis Ababa provided from December 2022 and May 2023.

1.7. Limitation of the Study

This study comprises several limitations, first, this study employed only self-reported questionnaire. Further study could do more interviews through research utilizing a wider range of customers using digital application in getting digital banking services. Second, the current study investigated the influence of 5 independent variables on one dependent variable, i.e., customer's satisfactions. Moderator variables should be simultaneously added into the theoretical framework of future research to improve the validity of the study. Third, one of the methodological

limitations in this study was the use of self-reported questionnaires. Future studies using qualitative methods should give a broader understanding of factors influencing internship satisfaction.

1.8. Organization of the Study

The preparation and organization of this study are covered in five chapters. The first chapter's part on the study's introduction contains information about the background, problem statement, research questions, objective, significance, scope, definition of terminology, and organizational structure. The second chapter is then offered, which contains both a theoretical and an empirical literature review. The third chapter then discusses research procedures, which include data analysis, research credibility, and data collection methods in addition to study approach, population, sampling, and sample size estimation. The fourth chapter immediately after present's data, analyzes it, interprets it, and makes comparisons and contrasts with past studies. The fifth chapter finishes with a summary of the findings and study recommendations.

CHAPTER TWO

REVIEW OF RELATED LITERATURES

2.1 Introduction

This section contains a survey of the associated theoretical and empirical research on mobile and customer happiness. Due to this, much effort is made to explore key terminologies and conceptual challenges associated with the study's main focus. As a result, it presents a theoretical analysis of the theory, ideas, and definitions of digital banking along with evidence from real-world research.

2.2 Theoretical Literature Review

2.2.1 Concepts and Theories of Digital banking

2.2.1.1 Concepts of Digital banking

Digital banking considers the introduction of contemporary financial services and products by banks to their clients via electronic means. The use of information and communication technology (ICT) by banks to provide services and manage client relationships more promptly and acceptably is also included by this technical definition. According to AL-Hawary and Hussien (2017), digital banking truly protects both computer and telephone banking. The tendency toward digital banking services increases client services while solidly binding customers to the bank for many banking companies. The adoption of digital banking is also seen as a fresh way to grow the clientele while fending off the aggressive push made by traditional financial organizations (Perera and Priyanath, 2018).

Customers can use digital banking to access information and do the majority of banking tasks online, including bill payment, inter-account transfers, and account balance inquiries. Therefore, e-banking refers to systems that provide access to accounts, business transactions, and information gathering about financial products and services across public or private networks for financial institutions, clients, individuals, and businesses. Customers use electronic devices like a personal computer (PC), personal digital assistant (PDA), automated teller machine (ATM), and telecommunication lines to access digital banking services. In actuality, 'Closed' private networks

only allow contributors (financial institutions, customers, business owners, and third-party service providers) who have agreed to the rules of membership to access the network. 'Open' public networks, on the other hand, don't have any such membership constraints (Bismark, Bismark, Eric and Isaac, 2015).

Since it is suitable, reasonably priced, and safe and secure, digital banking is instantly available anytime, anywhere throughout the nation. As a result, it is crucial to increase bank deposits because it is highly effective in creating saving habits (Tilahun. 2016). Electronic value transfer of a payment from the payer to the recipient via an electronic payment method is what is meant by the term "electronic payment." This electronic payment service has a web-based user interface that enables users to access, manage, and conduct transactions with their bank accounts. With the advancement of telecommunication, distant electronic payment is quickly replacing the conventional ways of payment that required direct contact between buyers and sellers. Online financial transactions involving electronic payment systems use some form of a digital financial device, such as e-tokens, e-cash and checks (Hussain, et al., 2019).

It shows that using digital banking applications poses a security concern because they heavily rely on cutting-edge information systems that expose financial institutions, enterprises, and possibly even consumers to risk. The capacity of various systems, and perhaps even various goods, to easily interact or share data is referred to as interoperability and is crucial to electronic payments. To facilitate the growth of the existing service, save investment costs, and ensure its sustainability, this system or electronic service is designed to reuse all pertinent governmental platforms, including the interoperability platform (Edmundo and Oxana, 2017). According to a report, becoming more accustomed to using electronic payment methods holds the promise of numerous benefits for both consumers and businesses, including lower expenses, better suitability and more secure, consistent means of payment and settlement for a potentially vast range of goods and services offered wide-reaching over the internet or other electronic networks (Tilahun. 2016).

A division of e-commerce, electronic banking systems include electronic payments for purchasing and selling goods and services made available online. Contrary to popular belief, there are really multiple different types of electronic payments, not just those made through online transactions. A digital financial instrument that is backed by a bank or other electronic

payment service intermediary often serves as the message of such electronic services or exchanges (Emad, 2021). Electronic banking refers to a number of services that allow bank customers to make information requests and do the majority of retail banking tasks through computer, television, or mobile phone.

Electronic banking is referred to as "digital banking," which is e-business in the financial sector (Gofe and Tulu, 2019). Additionally, the globalization of the business enterprise brought about by electronic banking has changed how business is conducted. Since there are so many different products available, people are adopting digital banking technologies at an increasing rate. Modern technologies primarily include direct deposit, computer banking, stored value cards, and debit cards (Sewalem, 2018). The term "electronic banking" refers to a variety of contemporary platforms, including internet banking (also known as "online banking"), telephone banking, television-based banking, mobile phone banking, and PC banking (also known as "offline banking").

Electronic systems or transactions are frequently used to refer to high-tech, digitalized, or electronic payment or banking channels that enable the delivery of banking services in a way that is effective, efficient, and convenient, such as internet banking, point-of-sale (POS) stations, automatic teller machines (ATM), and contemporary or smart mobile phones (Emad, 2021). A more blatant inclination of businesses to use these networks to conduct a new sort of commerce, the electronic commerce, through the internet has been brought on by the rapid development of the high tech financial system or the interconnectedness of computers in the internet in all segments of society. All banking transactions are now completed through an online application, thanks to the banking sector's recent leadership in this trend is sometimes called digital banking (Sewalem, 2018).

2.2.1.2 Theories of Digital banking

Banks may now provide their financial services to customers whenever they need them using a number of communication channels, such as the internet and mobile networks, thanks to technological advancements. Evident invention technology attributes are important components that may be observed and tested in specific ways in different analytical units. These observations and tests can expose each attribute's deficiencies, which can subsequently be improved upon or eliminated (Mekonene, 2020).

2.2.1.2.1 Diffusion of Innovation Theory

The process of an innovation being spread among the participants of a social system over time through certain routes and a particular kind of communication is known as diffusion. The process of diffusion can be thought of as having many complicated components, and the environment in which innovations are created and used has a significant impact on the rate of adoption. Although it involves a complex procedure with little modifications to ensure all the system's components fit together, diffusion is not a passive or inert process. It is a unique form of communication because the messages deal with novel concepts (Edmundo and Oxana, 2017).

This argument is not supported by this study because digital banking is regarded as a commercial bank innovation that provides an alternative to services that are only available through conventional payment systems, in this case, cash payments on various platforms. It also explains how messages are transmitted from one person to another, how ideas are transferred, and how to establish more successful communication between two people. It disregarded the amount of post-technology acceptability or did not support the operational features of digital banking. This includes any other theories that were comparable. It uses the Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), and Theory of Reasoned Action (TRA). Technology acceptance theory is mostly linked to consumers' purpose or level of acceptance in the way of information system or new technology.

Additionally, practically all of the aforementioned models discussed perceived behavioral control, which is the way in which an individual perceives the ease or difficulty of carrying out a specific behavior (Gofe and Tulu, 2019). TAT was developed on the basis of perceived technology benefits and usability. The next feature of the theory of planned behavior is the behavioral intention, which is impacted by attitudes, subjective norms, and perceived behavioral control. In turn, behavioral intention governs actual behavior. The theory of reasoned action (TRA), which incorporates four general principles, has been useful in describing behavior that goes beyond technological acceptance (Mekonnen, 2020; Bultum, 2014).

2.2.1.2.2 Taxonomy of Information System (IS)

One of the important contributions in this stream is the taxonomy of information system (IS) effectiveness or success. This is a thorough taxonomy of IS success, also known as the Original

DeLone and McLean IS success model, and it includes six important factors that contribute to IS success: system quality, information quality, user satisfaction, system use, individual impact, and organizational impact. Numerous academics employed the original DeLone and McLean IS success model in their IS success studies soon after it was published (Basheer et al., 2015).

The four constructs of the original DeLone and McLean IS success model—system quality, information quality, user satisfaction, and system use—as well as their links to one another were proposed and critically studied in this work. It is a thorough framework that successfully incorporated prior research on IS success. The taxonomy model also recommended important extensions to include many cognitive elements and beliefs, such as attitude, trust, and perceived utility, in the study of digital banking context that drew on the work of DeLone and McLean. These additions to the DeLone and McLean IS success taxonomy were therefore both anticipated and requested.

It was noted that the majority of the expansions to the DeLone and McLean IS success taxonomy were made by fusing the taxonomy's measures of IS success with existing perceptual-cognitive factors and beliefs found in the background of technology acceptance. In keeping with the study's goals, this research also used the theory of Taxonomy of Information Systems, which DeLone and McLean's EC success model proposed as a theoretical foundation, and proposed a modified model to pinpoint the root causes of continuous usage intention in the context of digital banking and investigate how they relate to one another.

2.2.1.2.3 Relevance Theory for this Study

The technology-based social system that will be examined in terms of the relationship between the social system and the diffusion process, the social structure, norms on diffusion, roles of opinion leaders and change agents, and finally types of innovation-decisions includes bank customers or users of the mobile banking app system. They also aid in comprehending how the expenses associated with gathering knowledge and conducting transactions serve as incentives for the development of financial markets and institutions. According to its theoretical model, financial institutions, markets, and instruments could develop to lessen the impact of information and transaction costs.

The function of acting as a route for communication amongst people is a key component of the diffusion of innovation theory. It is also underlined that its function in interpersonal channels is

more effective at persuading people to embrace a new idea, which contributes to an increase in idea transfer and more effective communication between two parties, such as between businesses and individuals. It may also take into account the time component, whose inclusion strengthened the innovation-decision process by which an individual moves from learning about an innovation to adopting it or rejecting it, the innovativeness of an individual or other unit of adoption compared to other members of a system, and an innovation's rate of adoption in a system, which is typically calculated as the number of system members who adopt the innovation in a given time period. The social structure that engages in collaborative problem-solving to achieve a shared objective is related to the diffusion of innovation theory, according to Perera and Priyanath (2018).

2.2.2 Concepts and Theories of Customer Satisfaction

2.2.2.1 Concepts of Customer Satisfaction

The consumer's reaction to the satisfaction of their demands and needs is satisfaction. According to this definition, consumer satisfaction is a positive state that results from using a good or service that satisfies their needs while also exceeding their expectations in terms of enjoyment. It is the level of a person's sensory state as a result of contrasting the outcomes of the product or service with that person's hopes and expectations. They may result from individual needs and past experiences as well as external information like advertisements and recommendations from friends, family, and other loved ones (Kotler et al., 2017). As a result, the gap between actual and anticipated performance and satisfaction level are related.

One of the following three levels of customer satisfaction is possible: dissatisfaction, satisfaction, or joy. The customer is disappointed if the performance is subpar to expectations, satisfied if the performance comes close to matching those expectations, and delighted if the benefits really exceed those expectations.

Customers' emotional reactions to their interactions with a good or service are another factor. Customer happiness can be determined by comparing the value of the goods and services consumers are receiving to those they previously received. It is how consumers react when their wants are satisfied. It is the evaluation by customers of a good or service that satisfies their needs

and predetermined criteria. In turn, this describes "customer satisfaction" as an evaluation that is measured against a product or service (Perera and Priyanath, 2018).

2.2.2.2 Theory of Customer Satisfaction

The most widely accepted theory involving customer satisfaction processes is the Expectancy-Disconfirmation Theory, also known as the Expectation Theory. According to the notion, a customer's happiness or discontent is determined by how well a product or service performs in relation to predetermined performance standards. The determined criteria reflect the customer's predicted expectations, which are consistent with the viewpoint (Bismark et al., 2015). The comparison could have one of three results. When performance is thought to be better than the predetermined expectations, positive disconfirmation happens. In this case, the customer is satisfaction and they are likely to be satisfied when performance is judged to be exactly equivalent to expectations, or when there is zero disconfirmation. Negative disconfirmation also happens when performance falls short of expectations. Negative disconfirmation inevitably results in angry or dissatisfied clients.

It has become common knowledge that positive disconfirmation is necessary. The expectancy-disconfirmation model is now the go-to theory for analysing public service user satisfaction. It assumes that people evaluate a service's performance in light of their expectations of it. If the performance meets or exceeds expectations, there is satisfaction.

2.2. Empirical Literature Review

For businesses looking to serve clients and deliver the necessary services in an effort to meet the requirements set by online shopping to achieve e-service quality, digital banking applications have emerged as a crucial technology tool. The global age is driven by technology, which is assuming control in every aspect of life. Mobile and online banking are just two instances of the always evolving technology. It is now possible for customers to access their accounts even from remote or rural places thanks to mobile banking (Benedict, 2020).

2.2.1 Effect of Digital banking and Customer Satisfaction

According to Ahmad and Abdel-Aziz (2019), the adoption of mobile IT had an impact on market performance in a business-to-business environment. It additionally had access to financial goods

and services through regular face-to-face interactions with tellers at banks. This is because financial management is changing quickly and will continue to do so. Both the theory and the practice of financial management are advancing thanks to developments in technology and electronic data applications. The company environment benefits when financial management has a more strategic focus. According to Thakur (2018), it is challenging to increase customer satisfaction and loyalty due to the significant advancements in electronic technology in the twenty-first century, notably in the banking sector with relation to e-commerce together he said that e-service quality could evolve customers experience and the way they navigate through mobile application in order to gain their satisfaction.

Edmundo and Oxana (2017) also made an effort to describe the role that mobile banking apps play in enhancing customer satisfactions by forecasting user behavior and the use of multimedia technologies. Because clients could only access financial services at specified locations and during a bank's operating hours, this strategy to offering banking services caused a mismatch between customer wants and bank capabilities. Additionally, it provides the essential elements of bank services like confidentiality, integrity, and authentication, strengthens online communication across an open and thus unsafe channel like the internet, and may be the ideal foundation for bank-client relationships given the possibility of some trust erosion. International e-banking has some significant consequences as well. Similar disclosure requirements and supervisory norms may also need to be covered by this cooperation and some co-ordinating of legal, accounting and taxation arrangements (Mekonnen, 2020).

By predicting user behaviour and utilizing multimedia technologies, Edmundo and Oxana (2017) also made an effort to describe the part that mobile banking apps play in raising consumer happiness. This approach to providing banking services led to a mismatch between customer demands and bank capabilities because clients could only obtain financial services at designated locations and during a bank's operational hours. Furthermore, it offers the fundamental components of bank services, such as confidentiality, integrity, and authentication; it strengthens online communication over an open and thus unsafe channel, such as the internet; and it might be the ideal basis for bank-client relationships given the possibility of some trust erosion. Additionally, there are certain important effects of international e-banking. It may also be necessary to cover comparable disclosure obligations and supervisory standards by this

cooperation and some harmonizing of legal, accounting and taxation arrangements (Mekonnen, 2020).

2.2.1.1 Security

In addition to having a significant impact on the quality of electronic services, security also help clients feel more confident when making purchases online. In addition to referring to the level of security on the customers' information and how the website is guarded against an unauthorized log in that could result in the loss or destruction of the private information, system materials, or software, privacy is defined as how the customers feel secure and safe on their own while using the website. Additionally, a user's perception of a website's security against outside access and the protection of their personal information is a key component of privacy (Serrah and Maideen, 2022).

According to a study by (Bismark et al., 2015), there could be a variety of assaults against digital banking, some of which include One of the most common assaults that don't require any prior computer system understanding is social engineering. Social engineering is the practice of convincing customers to divulge private information by impersonating system administrators or customer support agents. On the other side, a hacker can employ a variety of methods to steal data by using port scanners to identify device access points. In order to identify access and information points, this kind of application transmits signals to a computer or other device and records the message that the system answers with. It can be "sniff" the connection between the user's computer and the database server to obtain a wealth of user information, such as credit card numbers and passwords. Information transported over a network can be obtained using a packet sniffer (Zooohan and Win, 2019). Finally, password cracking can utilize a variety of sensitivity and decryption methods; nevertheless, the most typical method is a brute force attack. Because they target systems that do not require complex passwords, users frequently use well-known names and phrases in their usernames and passwords. Brute force password attacks search thousands of popular phrases, terms, behaviours, and names before combining them to provide access to a server, so users will often use popular names and details which make the login to the device simpler for a password cracker (Serrah and Maideen, 2022).

- H₁ - In the banking business, security have significantly and favourably affect customer satisfaction with digital banking.

2.2.1.2 Speed

It has to do with online payment systems since they make for an easy target for identity and money theft online. Customers are required to give personal information online, including credit card and payment account information. There are security hazards when submitting this information by phone, mail, or other means that aren't always secure (Faruq & Hartini, 2013). According to Edmundo and Oxana (2017), the rate of adoption refers to "the relative speed at which individuals of a social system accept an innovation. It is sometimes determined by counting how many people accept a new idea over a predetermined time period, such as a year, quarter, or month. It offered three diffusion s-curves of innovation, which represent the pace of acceptance is a numerical pointer of the steepness of the adoption curve for an innovation.

According to Benedict (2020), compatibility is the extent to which a new idea is viewed as being consistent with the requirements, past experiences, and values of potential adopters. The dimensions of the national's expectations and satisfaction assessment of online public services will serve as the framework for the analysis of the compatibility attribute of diffusion of innovation. The degree to which sociocultural values are being addressed may be determined by looking at the national expectations parameter, and the degree to which consumers' needs for innovation are being met can be determined by looking at how satisfied they are with the quality of online public services.

- H₂ – In the banking business, speed has significantly and favourably affects customer satisfaction with digital banking.

2.2.1.3 Ubiquity (appearing everywhere)

It continues to be well-liked since it is thought to be less expensive than other methods of payment. The development of the digital banking system calls for expertise and knowledge. As a result, there is less understanding to apply technologies, apply payment systems, and provide remedies for system failure (Ahmad and Abdel-Aziz, 2019). Digital banking systems are recognized to require a strong network infrastructure. However, smart card-based digital banking systems do not necessarily require network infrastructure. However, the smart card must meet strict security requirements as a result. A digital banking system that operates without the usage of a network is the Abyssinia Card, a smart card payment system used for fuel transactions (Zooan and Win, 2019).

A digital banking system that operates without the usage of a network is the Abyssinia Card, a smart card payment system used for fuel transactions (Zooohan and Win, 2019). Current price structures and corporate strategies unintentionally support a less effective system. In general, the costs associated with providing the relevant payment services are not reflected in the prices of payment transactions. As a result, it does not give users the proper price cues to use more effective and efficient payment methods. In reality, there should be a larger price for cheque payments because they have a high variable cost.

- H₃ – In the banking business, Ubiquity (appearing everywhere) has significantly and favourably affects customer satisfaction with digital banking.

2.2.1.4 System Availability

In the form of lower costs, more convenience, and more secure, dependable means of payment and settlement for a potentially wide range of goods and services offered globally over the internet or other electronic networks, the overview and use of electronic payment instruments hold the promise of broad benefits for both business and consumers (Humphrey, Ovidiu, Seyed, and Alin, 2015). The capacity of various systems, and perhaps even various goods, to easily interact or share data is referred to as interoperability and is crucial to electronic payments. Applications for electronic payments and digital banking pose a security risk since they are so dependent on vital ICT infrastructure, which exposes financial institutions, commercial enterprises, and maybe even consumers to risk.

In order to facilitate the expansion of the current service, reduce investment costs, and guarantee its sustainability, the electronic payment service is created to reuse all pertinent governmental platforms, including the interoperability platform (James and James, 2014). The perceived ease of using e-money services and the perceived ease of learning how to use them serve as indicators of the degree of ease connected with using the e-money payment system. In addition to attitude, effort expectations and social variables have a big impact on how people behave when utilizing e-money. The two predictors relate to areas where subjective norms and social influences are used.

This shows that one or more domains from a well-known and widely-used basic framework continue to produce reliable outcomes. Analysis of the use of e-money as a form of payment

transactions consistently confirms findings from earlier studies, namely that social factors and effort expectations are determinants of behaviour (Widayat et al., 2020).

- H₄ – In the banking business, System availability has significantly and favourably affects customer satisfaction with digital banking.

2.2.1.5 Control

Customers are now more active, engaged, and in control thanks to the advent of interactive technology in mobile applications. Customers can perform a variety of online tasks with just one click when using mobile applications, including gathering up-to-date information about services or products, comparing alternatives, monitoring the status of their orders, selecting the best payment option, and leaving comments and reviews (Benedict, 2020). Making an internet payment is not a simple procedure or activity. Even those with education have difficulties while making payments online. As a result, they never choose internet buying over traditional methods. Occasionally, a technical issue with the server prevents customers from making online payments. As a result, they avoid doing so. Perceived quality is a type of attitude that emerges from the consumption of expectations and perceptions of performance, yet it is not the same as satisfaction. The degree of agreement between expectations and experience determines how well the consumer perceives the quality of the service (Emad, 2021).

- H₅ – In the banking business, control has significantly and favourably affects customer satisfaction with digital banking.

2.2.2 Digital Banking

By putting up a platform integration model based on current ideas, Benedict (2020) made a first step toward gaining a deeper understanding of integration on digital platforms. Premises on the influence of integration were created and tested utilizing data from more than 82,000 apps with regard to dynamics related to digital amalgamation. The findings show that platform integration has a beneficial impact on application success and customer happiness. Platform integration has a beneficial impact on application success and user happiness, according to an investigation of several regression models. Developers should take into account a variety of integration-related factors, including devices, data, the operating system, the market, other apps, and updates, in order to produce improved results.

According to Widayat, Ilyas, and Novita (2020), convenience and practicality are the main drivers of e-money adoption. The main justifications for why clients prefer electronic digital or modern money transfers are their affordability, usability, quickness of transactions, ability to process payments more quickly, and simplicity of the payment procedure. The analysis shows that these two domains specifically forecast client sentiments concerning e-money. That is, both the assistance provided by infrastructure and the influence of social variables result in positive customer sentiments toward the methods employed. Edmundo and Oxana (2017) discussed how an electronic payment system is effecting the dissemination of innovation among online public services, resolving issues at the level of the government, and offering remedies for the money laundering and all other associated problems in one country.

Out of five criteria, four (all but compatibility) are improving the rate of innovation adoption from the Public and Payment Services Providers' perspective, compared to only two traits (relative advantage and trial ability) from the Consumers' perspective. Few studies have examined the effects of mobile applications (apps) on users' subsequent brand purchasing behaviour, despite the fact that they have emerged as a significant platform for businesses to engage with consumers.

2.2.2.1 Level of Customer Satisfaction in Banking

By focusing on the supplied service and product quality as well as customer retention for repurchase intention, Zoohan and Win (2019) anticipated at the documenting of customer satisfaction. It was determined that a product's quality and customer satisfaction are key indicators of effectiveness and achievement. The goal of consistently providing high-quality goods and services is to retain current customers and encourage future purchases. The goal of customer retention is to draw customers for future repurchase intentions, which is made possible by a consistent strategy of higher returns and useful, long-lasting relationship advantages. Customer satisfaction (CS) and repurchase intention (RPI) are two of the most important business metrics. The power and electrical component of this study focused on UPS (Uninterrupted Power Supply) in the country, Australia.

By means of a unique dataset from a coalition loyalty program and the implementations of propensity score matching and difference-in-difference-in-difference methods, Su Jung Kim et al. (2015) investigated whether adopters' spending levels will change after they use a brand's app. They compared the spending levels of app adopters with those of non-adopters. This study specifically examined whether adopters' purchasing habits are influenced by their use of the app's two primary interactive features, information lookups and check-ins. According to this survey, downloading and using branded apps increases subsequent spending. Additionally, consumers who use both features have the greatest growth. Rahman (2012), on the other hand, evaluated mobile banking in terms of digital banking and its advantages. The survey discovered that Bangladesh's business community demanded more from Bangladesh as a result of digital banking as well as the retail customers principally the urban customers.

This study discovered that Bangladesh's biggest problem is providing digital banking services. A few of the issues include a lack of skilled labour, inadequate power supplies, a lack of citizen knowledge, reluctance on the part of service providers, slow internet connectivity, and a lack of equipment. Romario (2019) also found that the most popular service is airtime purchases, while the least popular service is allocating funds, and that mobile banking services in the Keetmanshoop banking sector have an overall satisfaction rate of 75%, are dependable, convenient, cost-effective, available on different mobile networks, advertisements are motivating, the service is compatible with mobile devices, and respondents' income (the social aspect of transacting) influences how frequently they use the services.

2.2.2.2 The role of Digital banking on customer satisfaction

Emad (2021) sought to determine how customers' satisfaction with Jordanian commercial banks was impacted by digital banking. The results of the study's showed that there is a trace of digital banking apps on repeat purchase, the willingness of the purchase in the Jordanian commercial banks, and there is the impact of various factors on the client access the degree of satisfaction from doing business with the bank or its own organization. The comparison method was used to achieve the goal of the study. According to the findings of this study, banks give greater thought to activating electronic services, especially for high-end mobile applications, because they have a significant impact on customer satisfaction, taking future research on the topic into account.

The usability, availability, information, security, and privacy of the digital banking application were analysed by Ahmad and Abdel-Aziz in 2019. This study used multiple regressions to find that users believe that mobile phone application sub-variables are very important, with usability ranked as having the highest value, followed by information, then privacy, security, and availability, in that order. Additionally, the fact that the respondents think that e-service quality criteria are highly important demonstrates how strongly they are supported by the respondents. The ease of use has been given the first priority, followed by fulfilment, effectiveness, responsiveness, and reliability. Because it benefits both retail businesses and customers, integrating mobile phone applications into the retail industry is now required rather than just an option. For retail establishments to provide clients with the service they demand, it is crucial to integrate mobile phone applications into their processes.

Romario (2019) used a quantitative approach to identify the mobile banking characteristics that affect consumer happiness. A self-administered structured questionnaire was used to gather information from a small random sample of 60 respondents. According to this survey, consumer satisfaction is influenced by mobile banking factors such as security, control, quickness, and reliability. According to Eva & Tony (2014), the bank's role in the partnership is essentially to maintain an account in which all of the network's agents have balances and which is debited or credited whenever an agent sells or buys mobile money for cash. Additionally, they discovered that the mobile phone provider dominates the relationship by hiring a network of agents to deal with clients and running the telecommunications infrastructure for effecting transactions and storing virtual money.

According to Asaolu, Ayoola, and Akinkoye's (2011) assessment of the implementation, issues, and solutions for the electronic payment system in Nigeria, there are many advantages to using this system, even in the developed world. According to their assessment, there is no compelling legal requirement for banks to utilize a common software platform, and this includes banks not using a consistent platform. The issue of switching when transferring funds from one bank to another exists. The issue of connectivity has arisen. Since various banks employ various numbering schemes, there is no uniformity in account numbers. The investigation also discovered that there is inadequate infrastructure. Due to a lack of knowledge about the advantages of new technologies and risk aversion, customers and staff are resistant to

technological advances. Asaolu, Ayoola & Akinkoye (2011) listed numerous benefits comes with its own challenges even in the developed world based on their study on assessing the electronic payment system in Nigeria as implementation, constraints and solutions. Their study found that there is no compelling law mandating the banks to use common software platform and included lack of uniform platform by banks. There is the problem of switches in effecting transfer from one bank to another. Interconnectivity has been a problem. No uniformity of account numbers since different banks use different numbering systems. In addition, the study found that there is lack of adequate infrastructure. Resistance to changes in technology among customers and staff due to dearth of awareness on the benefits of new technologies, fear of risk, deficiency of trained personnel in key organizations, tendency to be content with the existing structures, and people are resistant to new payment mechanisms.

The impact of mobile banking system variables on client satisfaction at Commercial Bank of Ethiopia was also studied by Mesfin (2019). The report also looks into significant difficulties the bank faced in providing the service, which could lower customer satisfaction with the technology. Both quantitative and qualitative research methods were used in the study. The outcome demonstrates a substantial correlation between payment customer satisfaction in CBE and the e-payment products (automated teller machine, mobile banking, online banking, and CBE birr). Additionally, the results show a correlation between age and educational level and customer satisfaction with using electronic payments.

Mekonen (2020) sought to investigate how Commercial Bank of Ethiopia's mobile banking in Addis Ababa affected customer retention and satisfaction. The study found that, using correlation test results and analysis, security, relative advantage / benefits, information quality, system quality, and customer satisfaction and consumer retention have a positive and significant relationship. Aside from the fact that there is a positive and significant impact of security , relative advantage / benefits, information quality, system quality, and customer satisfaction on customer retention, customer satisfaction makes the strongest unique contribution to explaining the customer retention and is followed by information, then relative advantage, and finally, relative advantage and system quality.

On the other side, Samuel (2018) looked at the impact of digital banking on customer satisfaction in Commercial Bank of Ethiopia using the SERVQUAL model's five service quality characteristics (tangibility, reliability, responsiveness, assurance, and empathy). In four CBE branches, a sample of 120 mobile banking customers was collected. The SERVQUAL model's five dimensions were used to build the quiz. Branch managers, officers for digital banking, and team leaders and managers for digital banking participated in the interview. The main conclusions of this study were that customer satisfaction with digital banking was significantly influenced by its tangibility and empathy. The study came to the conclusion that customer happiness and the parameters of the quality of the digital banking service were correlated linearly.

2.3. Research Gap

In Ethiopia, using digital banking has emerged as a fresh way for customers to access banking services and products. The goal of Ethiopia's development in banking technology is to provide customers with better services, such as easy access to their money and other banking information they might require. Some institutions in the Ethiopian banking industry lean toward digital banking in the broad sense, which includes the use of ATMs, telebanking, and smart cards for banking. Banks have really incorporated internet channels into their computerized banking systems, nevertheless. This is based on the supposition that a tiny fraction of businesses have truly developed their electronic banking services beyond the use of smart cards and Tasman digital banking (Mekonen, 2020). After deciding on the primary topic for the study, the research problem was established by reviewing the theoretical and empirical literature that was relevant to the initial topic. Mekonen (2020), among other research on the dissemination of innovation of mobile payments or mobile banking systems, focused on e-mobile-agent banking. Su Jung Kim et al. (2015) investigated the effects of adopting and utilizing a brand's mobile application on customers' subsequent purchase behavior.

Others, like Benedict (2020), focused on how integration affected the success of mobile device platforms' applications and users' satisfaction. Most research on the use, prospects, and challenges of mobile banking do not adequately account for crucial factors like Fikadie (2021), Sewalem (2018), and Saba (2016). However, it was observed that banks electronic payments

were given less consideration in terms of speed, security, and conventional or modern government payment aims. The current study analyzed this gap in order to address the question of how a governmental electronic payment system affects the diffusion of innovation and e-transformation of the public services from the standpoint of customers, public service providers, and payment operators. In this study, the operational features of the digital banking system were assessed, along with their effects on customer satisfaction and factors like speed, expectation, intention, ubiquity, and convenience.

2.4. Conceptual Framework

Customer satisfaction is the dependent variable, and it is on the right side of the framework. On the other hand, there are the independent variables, which are found on the left side of the framework and include (security & privacy, reliability, system availability, and website design). The dependent variable and independent variables were identified by Serrah and Maideen (2022), who also demonstrated their link. Benedict (2020) claims that the fundamental component of the theory governing the diffusion of innovations is innovation (speed, control, and availability). An idea, activity, or product is considered innovative by a person or other unit of adoption.

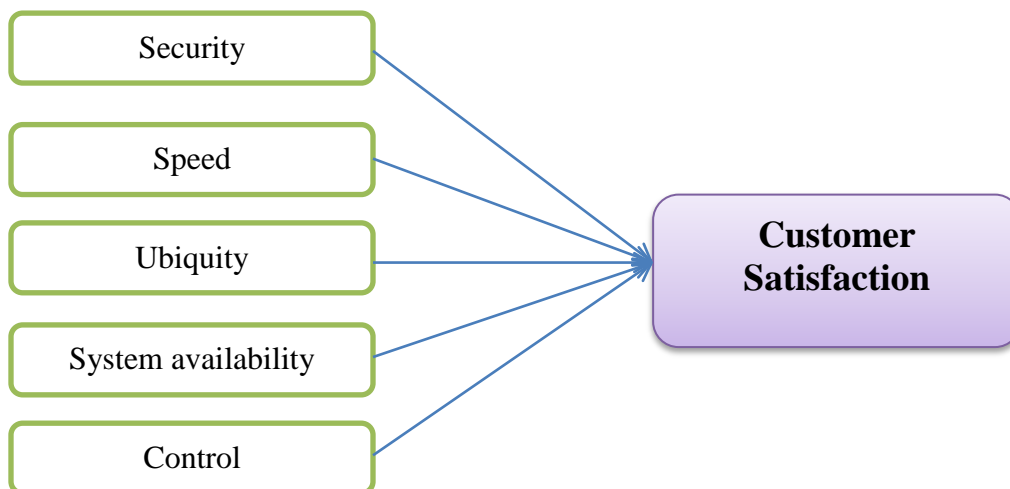


Figure 1 Conceptual Framework

Source: adapted from Serrah and Maideen (2022), Benedict (2020) and Basheer et al., (2015).

The framework model was developed with the understanding that security , system accessibility, speed, and control are all separate factors that are essential to the quality of digital banking services and have an impact on customers' happiness with such services. the introduction of a new production technique, which need not be based on a novel scientific discovery and can instead take the form of a novel commercial handling of a good; and the introduction of a new market, meaning a market that the particular branch of manufacture of the concerned country has not yet entered, whether or not this market has previously existed. For study, bank-based electronic payments were viewed as a development in global electronic payment systems for banking services that provides an alternative to those services that are only available through out-of-date payment systems, cash expenditures made through numerous platforms.

The idea is to collect and use financial information about existing, comparable mobile applications. Data was investigated prior to developing a mobile application for a banking customer base. Bankers may find the information helpful when deciding whether to have a mobile application. The complete thesis provided guidance on how and where the application should be developed to best meet the needs of the banking sector. This study modified the model proposed by Basheer et al. (2015), who envisioned a research model that explains the reasons of digital banking user satisfactions, retention, and the current interrelationships. Both frequent usage of digital banking and intense involvement in the electronic banking system are evidence of how satisfied users are with digital banking.

A contented or retained user who has already embraced digital banking did so again as a result. The satisfaction with Android mobile banking apps is therefore, from the perspective of IS acceptance, a post-adoption phenomenon (an operational aspect), and the fundamental theory for developing the study model should provide a thorough understanding of the factors that influence IS continuous usage intention. This study provided a single, universally applicable, yet comprehensive approach that fundamentally incorporates both descriptive and relational investigations in order to estimate user retention for digital banking in the post-adoption environment. The dimensions and their suggested interactions are covered in detail in this chapter.

In the study area, there are eleven (11) sub-city administrations. Along with the headquarters of various international organizations, it houses the sector offices of the federal government. The study's focus was the capital city of Ethiopia. The population of Addis Ababa is more technologically savvy.

3.2.2 Background of the Organization

The Commercial Bank of Ethiopia (CBE) was established in 1942, and a share company status was granted to it in 1963. Since then, it has significantly contributed to the advancement of the country's banking technology. It was founded to introduce contemporary banking to the country, and it presently has more than 2456 branches dispersed over the country. With assets of 1,021 billion Birr as of June 30, 2021, it is the biggest bank in Africa. It aids in the expansion of the industry, the advancement of technology, and the creation of the electronic banking system. For instance, it was the first bank in Ethiopia to provide access to ATMs for local customers. At CBE, there are already more than 25 million customers of both mobile and internet banking. There will be more than 5.9 million banking customers by June 30th, 2023. Because of the large bank's adoption of ICT advancements, traditional banking systems have been changed into great electronic and digital channels for promoting financial inclusion. Access to payment services for the nation's unbanked population is being improved. CBE has solid and long-lasting relationships with several reputable banks throughout the world. It aspires to become a premier commercial bank by 2025. It is committed to attaining stakeholder values through improved financial intermediation by leveraging the best professionals and technology (CBE, 2022).

3.3 Research Approach

This study combined quantitative and qualitative methodologies to analyse respondents' individual attitudes and opinions of mobile apps and their features or activities. Serrah and Maideen (2022) and Mekonen (2020) employed comparable methodologies to examine how digital banking influences customer retention and satisfaction in the banking industry. Research in this situation depends on the perceptions and insights of the researcher. Findings from this type of research methods are either non-quantitative or have not received extensive quantitative analysis. The quantification of event size, breadth, and frequency was a major focus of this work.

The study was quite thorough and organized, making it easy to gather the results. What percentage of the banking industry is satisfied with digital banking, and what factors affect it? Was one of the study questions included in the initial quantitative phase? For this study, CBE's clients were chosen at random and polled. Comparative to quantitative research, qualitative research is more subjective and focuses on a subject's intangible characteristics (Creswell, 2014). Similar methodologies were used by Mekonen (2020) to study how mobile banking affected customer retention and satisfaction in Commercial Bank of Ethiopia's mobile banking in Addis Ababa. The five service quality characteristics of the SERVQUAL model were utilized by Samuel (2018) to examine the impact of digital banking on customer satisfaction in the Commercial Bank of Ethiopia.

3.4 Research Design

Descriptive and explanatory research designs made up the majority of the study. A descriptive research design was first adopted for this investigation. Its main focus was on outlining the features of the various elements that went into the study's consideration of consumer satisfaction levels and digital banking. The researcher clearly recognizes both the internal and external issues with digital banking in this study, as well as its benefits. This aids in acquiring thorough and trustworthy information as well as the meticulously planned strategy to be applied. To investigate the causal relationships between the dependent and independent variables as well as the effects of digital banking on customer satisfaction, the case of Commercial Bank of Ethiopia in Addis Ababa was employed.

As a result, this study enabled the correlation of data relationships and the explanation of the features of banking electronic payments. Additionally, the researcher used the facts or raw data that were previously available to critically analyze and evaluate the data. Perera and Priyanath (2018) were able to identify the nature of the relationship between the quality of the digital banking service and customer satisfaction using an explanatory study approach. The properties of both dependent and independent variables can be identified and explained by the researcher using an explanatory study design, according to AL-Hawary and Hussien (2017).

3.5 Data Type and Source of Data

Depending on the topic, primary and secondary sources were used to compile the data and numbers used in the current study. The primary data was acquired from CBE's customers using a standardized, closed-ended questionnaire survey. In the study, primary sources were largely used. Primary data, according to Saba (2016), is information that a certain entity independently collects in order to address a specific issue. The fact that this data was acquired with the goal of advancing the research is its main advantage. The major source of data is the researcher's own compilation and analysis of client findings. The researcher used secondary data to create the study's essential framework before going on to the primary data. Pre-existing literature was obtained as a secondary source.

3.6 The Population of the Study

3.6.1 Target Population

Customers who used digital banking services at CBE locations in three Addis Ababa City Administration sub cities were included in the target audience. As of December 2022, 95 000 users of digital banking services were registered with Addis Ababa City Administration throughout all six of its chosen branches (Jemo Michael, Sheger, Merkato, Lideta, Silasie, and Africa Union) in three of its sub cities, according to CBE. As a result, the researcher estimated that 95,000 CBE users in a few important Addis Ababa, Ethiopia, regions made up the study's total population. The study population in this investigation consists of users of electronic banking in the downtown area of Addis Ababa.

3.6.2 Sample Frame

The population of the study consisted of every client of the investigated private commercial bank in Ethiopia. In order to save money each year, the researcher therefore wanted to consider a few branches based on their performance.

3.6.3 Sample Size

The sample size was determined using a single population proportion calculation under the presumptions of a 95% confidence level, a 5% margin of error, and a proportion of 50% for the

study region in CBE. In order to calculate the sample size (n) of an infinite population, Benedict (2020) applies the formula shown below:

Given as under:

$$\mathbf{n = z^2 \cdot p \cdot q / e^2}$$

Where,

n= sample size,

z= the value of standard variation at a given confidence level and to be worked out from table showing area under normal curve.

p= sample proportion (50%);

q= 1-p (50%) and

e = given precision rate or acceptable error.

$$\begin{aligned} n &= (1.96)^2 (0.50) (0.50) / (0.05)^2 \\ &= 384 \end{aligned}$$

To get sample proportion the researcher uses the following formula:

$$\mathbf{nh = (Nh / N) * n}$$

Where; nh is the sample size for stratum h i.e. respective banks; Nh the population size for stratum h i.e. respective banks; N is the total population size; n is the total sample size. The following table depicts the proportion of the sample size for each branch.

Table 1 Sample Size Determination

Branch	Target population	Proportion 384/95,000	Sample size
Jemo Michael	15480	0.00404	63
Sheger Branch	13580	0.00404	55
Merkato	20110	0.00404	81
Lideta	15900	0.00404	64
Silasia	15480	0.00404	63
Africa Union	14450	0.00404	58
Total	95,000		384

Source: Survey result, 2023

3.6.4 Sampling Technique

The study set out to investigate the effects of digital banking on customer satisfaction and the influencing factors in certain CBE branches. Six branches from Addis Ababa were chosen for this study utilizing convenience sample techniques out of the 1660 CBE branches that exist throughout Ethiopia. In a convenience sample, a non-probability sampling technique, the sample is drawn from a group of persons who are simple to get in touch with or locate at a particular time.

The six banking outlets or branches were chosen based on their accessibility for data collection and the branch managers' willingness to assist with data collection by interacting with customers at the counter. As a result, a convenience sample technique was used to select a total of 384 respondents depending on their willingness to complete the questionnaire. A researcher chose the participants of the sample based on fundamental standards such familiarity with commercial banks' electronic services, experience with digital banking, and substantial financial transactions. Without taking into account any selection criteria, clients who were interested and willing to conduct a survey while spending time there were chosen as sample respondents. Additionally, a non-probability sampling method was utilized for fifteen participants from the top management team and staff, employing easy sampling for qualitative data.

3.7 Instruments of Data Collection

The researcher employed an interview and a questionnaire as two different data collection approaches for the objective of obtaining primary data.

3.7.1 Questionnaire

In order to gather information for this study and learn how customers felt about the Bank's mobile banking service and customer satisfaction levels, closed-ended five-point Likert scale questionnaires were used as the data collection method. The questionnaire was divided into two parts. In the first portion, which comprised a demographic profile, the researcher was able to learn about the participants' gender, age, educational background, monthly income, occupation, and length of banking relationship. A few of the items in the second section helped the researcher in her investigation of the effect of bank mobile banking on customer satisfactions. The questionnaire that clients must complete to assess the construct dimensions contains items from past studies. Benedict (2020) and Emad (2021) were modified using the five-point Likert scale (Likert, 1922) with scale 1 denoting "strongly disagree," 2 "disagree," 3 "neutral," 4 "agree," and 5 denoting "strongly agree." Respondents were asked to rate how much they agreed or disagreed with each of the questions that were put forth. Many researchers employ this methodological tool because it is reasonably easy for respondents to use and because replies from such a scale are probably reliable.

3.7.2 Interview

For the purpose of this study, the researchers interview 12 participants (Customers, Branch Managers and Employees) using face to face interview method. The interview is a crucial method of data collection that involves verbal exchanges between the researcher and the subject. In exploratory and descriptive research as well as survey designs, interviews are frequently used. There are various methods for conducting interviews, ranging from entirely unstructured methods where the subject is free to discuss anything they want to, to highly structured methods where the subject is only permitted to respond to direct questions.

3.8 Instruments Validity and Reliability

3.8.1 Instrument Validity

Validity, the most crucial criterion, describes the degree to which an instrument assesses what it is meant to evaluate. Kothari (2014) explains validity as the extent to which variances found by

measurement equipment accurately represent variations among the test subjects. In this study, content validity was utilized to assess how well a measurement tool captured the topic at hand. Although it cannot be quantified, it can also be assessed by a group of individuals who will assess how well the measuring instrument conforms to the requirements. To consider the content validity of this study, the knowledge of the supervisor, two financial managers, and information technology professionals was consulted. These professionals carefully reviewed each questionnaire question that also performed their own analysis to confirm that the questions addressed the subject area's research objectives.

3.8.2 Instrument Reliability

For precise measurement, reliability testing of data instrument (questionnaire) is an essential test. A measuring gadget is dependable if it produces repeatable results. Although it doesn't necessarily make an instrument valid, reliable measurement equipment does add to validity. Since reliability is easier to evaluate than validity, it is less valuable than validity (Kothari, 2014). The reliability test result is presented in the next chapter.

3.9 Data Analysis Methods

Descriptive statistics like percentage, mean, and standard deviation were utilized to analyze the results after the data were collected using a survey questionnaire. Descriptive statistics were used to present data as central tendency (or the "middle values" of groups) like mean and variance (or a breakdown of variations within groups) like standard deviation. As a result, the percentages show the frequency distribution of the variables. On top, the standard deviation is crucial for showing the vast range of answers to a certain study question. A low standard deviation shows that respondents have close opinions, whether they are positive or negative, but a deviation in this context indicates that the data are dispersed, meaning that respondents have a range of opinions.

The statistical package for social sciences (SPSS) data analysis application was used to analyze the quantitative data. Customer satisfaction was the dependent variable used by the researcher, while the other four independent variables were speed, control, and anticipation.

Data analysis is the process of giving the collected raw data significance. Descriptive statistics and inferential analysis (multivariate regression and correlation) were both used to assess the quantitative data from the widely disseminated questionnaire on satisfaction with digital banking.

To improve the significance, readability, and clarity of the analysis, the demographic profile of the respondents was assessed using descriptive statistics, such as the arithmetic mean, frequency distribution, standard deviation, and percentages. The researchers were in a position to provide the information they had gathered in a structured, accurate, and summary way thanks to descriptive statistics.

3.9.1 Study Model

The following is a description of the empirical models that was utilized in the study to examine how customer satisfaction is impacted by service quality:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e_i$$

Where:

- Y = "Customer Satisfaction"
- β_1 = The constant
- $\beta_2 - \beta_5$ = "Coefficients" of independent variables
- X_1 = Speed
- X_2 = Convenience
- X_3 = Ubiquity
- X_4 = Expectations
- X_4 = Control
- X_5 = Security
- e = error

3.9.2 Model Assumptions

The data were checked to see if they supported the basic assumptions of the traditional linear regression model using the diagnostic tests listed below, which were adapted from Flex (2015).

- **Normality:** Use of descriptive statistics was made to verify the normalcy. A normal distribution is one that is not skewed and has a kurtosis coefficient of. The shape of the data distribution or a specific metric variable and its connection to the normal distribution, which serves as the standard for statistical procedures, are both considered to be examples of normality.

- **Heteroscedasticity** – It implies that the variance of error terms is not constant. The ordinary least square method's estimators are ineffective in the presence of heteroscedasticity, and hypothesis testing is no longer valid or reliable because it overestimated variances and standard errors.
- **Multicollinearity**: Any correlation coefficient above 0.7 may result in a significant multicollinearity issue, which could result in inaccurate estimation and less dependable outcomes.

3.10 Ethical Consideration

The basic guiding principles of the study were standard research ethics and methodologies, which encompassed core ethical rules of conduct throughout the research process. The respondents' dignity, culture, time, and interests came first, then everything else. The data was acquired based on participant availability and willingness. Prior to the actual data collection, research data collection techniques, such as letters and brief notices, were effectively planned. A covering letter was appended to the questionnaire and interview guide to safeguard the participant's anonymity and confidentiality and to stop the information gathered from them from being shared to a third party. Respondents were then informed of the study's objectives during the actual data collection. The survey also offered inconspicuousness, meaning that the respondents' information was kept private and was not skewed for any other personal reasons.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter presents the study's survey and interview results after data collection, followed by a discussion of how the results were interpreted and how they contrasted to past studies. It includes the frequency of responses, demographic data on respondents, and a response analysis utilizing descriptive statistics in order to address the study objective.

4.2 Reliability Test Outcome Examination

As per indicated in chapter three, this study used Cronbach's Alpha for reliability test investigation as exposed in the below table.

Table 2 Reliability Statistics

Variables	Cronbach's Alpha	N of Items
Security	.833	6
Speed	.898	6
Ubiquity of digital banking	.892	6
System availability	.794	4
Control of digital banking	.823	4
Customers Satisfaction	.781	6
Overall	.851	32

Survey Result- SPSS Output, 2023

Because it shows what proportion of the entire variation in scale scores cannot be attributable to random error, Cronbach's alpha was therefore used in this investigation. Cronbach's alpha..833, 6 for speed and privacy were found by this investigation.898, 6 Use of digital banking is widespread. Accessibility of the system: 892, 6.Control of digital banking is evaluated at.823, 4, and 794, 4. Customer satisfaction is assessed at.781, 6. These results show why the data collection technology was thought to be excellent.

4.3 Response Rate

Successful face-to-face administration of the survey questionnaire took place in March and April of 2023, providing participants 30 minutes to respond. There had been 315 responses within a few days. Below is further information about response rates.

Table 3 Response Rate through Branches

Branch	Distributed	Returned	Response Rate
Jemo Michael	63	48	76%
Sheger Branch	55	49	89%
Merkato	81	70	86%
Lideta	64	51	80%
Silasie	63	55	87%
Africa Union	58	51	88%
Total	384	324	84%

Source: Survey result, 2023

Table 2 above validates 384 self-administrated questionnaires were used in this investigation, as can be seen in Table 2 above. These surveys were distributed to the respondents by the respective designated branches, and they got extremely close monitoring and help during the entire process. As a result, our study was able to successfully collect 324 genuine (well-filled) questionnaires from the respondents of the studied clients. Before being used for analysis, these questionnaires were properly filled out, submitted in the proper format, and certified as entirely suitable for data management. It shows that eighty four percent (84%) of all the respondents who were targeted for the poll participated. In order to collect qualitative data from the prepared interview checklist and the outcomes of the questionnaire, twelve interviewee sessions (12 interviewees out of 15 projected or 80% response rates) were also arranged. According to Tilahun (2016), a response rate of at least 70% qualifies as exceptional. As can be seen from the table above, a satisfactory and consistent response rate for the study was 84%.

4.4.Sampled Customers Respondents' Profile

The demographic profiles of the respondents were summarized in this area of the data presentation. This information included the distribution of respondents by sex, age, and educational level as well as the duration of their interactions with the bank.

Table 4 Sampled Customers' Profile

Variables – Category		N	%
Gender	Female	131	40.4
	Male	193	59.6
Age (in year)	Less than 20	28	8.6
	20 - 30 years	99	30.6
	31 - 40 years	76	23.5
	41 - 50 years	58	17.9
	51 - 60 years	51	15.7
	61 years & above	12	3.7
Educational Status	Below grade 12	13	4.0
	12th Grade complete	38	11.7
	Certificate	83	25.6
	College Diploma	104	32.1
	First Degree	69	21.3
	Second Degree (Master's Degree	17	5.2
	Third Degree (PhD)	0	0.0
Employment	Government Organization	99	30.6
	Self-employed	135	41.7
	Private Organization	53	16.4
	Student	37	11.4
	Not employed	0	0.0

Source: Survey result, 2023

Based on the results of the Addis Ababa survey, the plausible responses are presented in the above table and the accompanying figures, followed by the consequences of the findings. According to the table above (Table 4), 131 (40.4%) of the sampled customer respondents are men, and 193 (59.6%) are women. In this study, 324 consumers were polled. This shows that the majority of the bank's customers who used digital banking were male respondents.

The aforementioned table demonstrates that the age group reveals that the majority of respondents sampled from customers lie within less age groups of below 20 which counted as 28 (8.6%), and of the total respondents 99 (30.6%) were grouped under aged 20 to 30, and few respondents (12, 3.7%) were categorized in the same response amount 61 years & above and above 66 years. It states that the majority of responders are in their adult years, when they can feel more accountable to carry out the responsibilities that are required of them with a sense of duty.

According to the respondents' educational profiles, 104 (32.1%) of those sampled from customers fall under the diploma category of education, and 69 (21.3%) of those sampled fell within the first degree category. 17 respondents (5.2%) in this study have master's degrees, which is a small percentage. This research shows that the majority of respondents with higher levels of education favored using digital banking systems. This demonstrates that well-educated employees have a range of preferences and issues with the digital banking system. It might be connected to the idea that someone with more education might be able to handle technology issues on their own. Emad (2021) predicted that as banking data networks that are used to carry out financial transactions grow, so would the potential for digital banking systems, their use, functionality, and associated benefits. Conclusion: The most preferred digital banking system in Ethiopia is perceived to be by all types of clients.

The majority of the respondents—99 in total, or 30.6 percent—work for the government, followed by 135 sampled respondents who are married self-employed (41.7 percent) and a small number of respondents—37, or 11.4%—who are students (97 or 30.8% of the total). As a result, the majority of responders do an excellent job of demonstrating that they have been practicing their roles of accountability and responsibility and that they are participating in work interactions. Additionally, it demonstrates that, despite the fact that men make up the majority of responders, the distribution of research participants among customers is often equal. It is possible to determine which digital banking system Ethiopians prefer based on consumer surveys.

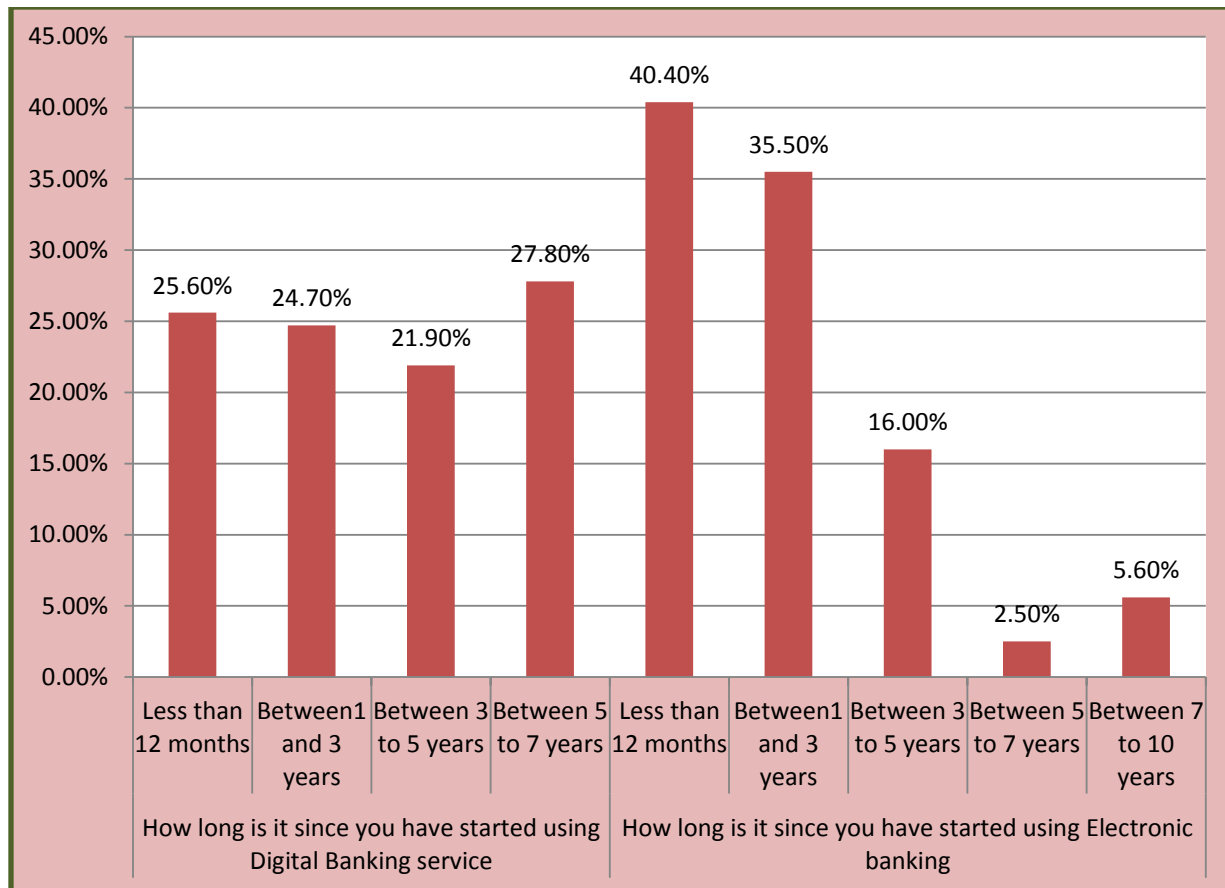


Figure 3 Usage of Digital Banking

Source: Survey result, 2023

The table above demonstrates the length of time that sampled respondents had interacted with the study company. In accordance with the data, 25.6% of all respondents have only recently (within the past 12 months) come to know this bank, and 24.7% have known them for between one and three years. Furthermore, the results indicated that 35.5% of the respondents had only recently become familiar with the computerized banking system. Furthermore, according to the research, 16% of them have been using commercial banks' digital banking services for three to five years, while fewer have been using it for longer. This shows that the survey, which thankfully included consumers with substantial experience using digital systems in commercial banks, helped to provide a more accurate image of the new technology used in the banks under examination.

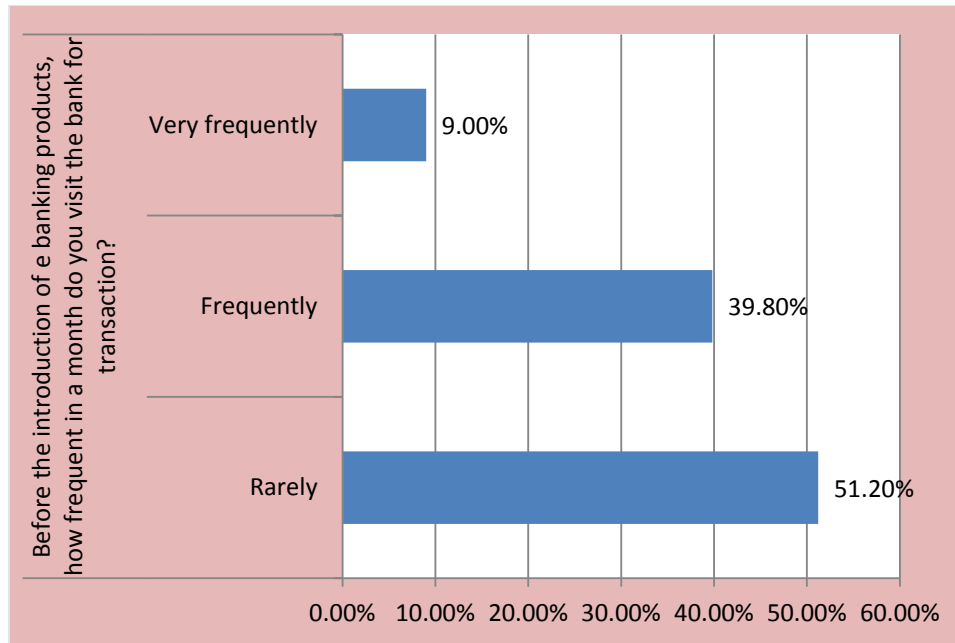


Figure 4 Usage of Digital Banking

Source: Survey result, 2023

They almost not ever used or went to the bank for transactions prior to the emergence of digital or electronic banking products. This demonstrates that clients felt confident using the digital banking system, which was also discovered to be the bank's most popular digital system. Additionally, data demonstrates that the majority of respondents favored this category and that customers can learn more about the banking system through digital banking. In this study, the most well regarded digital banking system in CBE was assessed. As a consequence, sampled consumers favored the category of technological banking and were satisfied with the high quality of the digital banking services they received. The perception of survey respondents regarding their choice for digital banking systems can be determined. This indicates that a person's choice for digital banking and the systems that support it depend on their prior experience dealing with commercial banks. This indicates that clients with varying commercial banking experiences have connected preferences and can enjoy a variety of advantages.

4.5 Response Analysis

Targeted respondents were asked to provide their opinions on security , relative benefit, information quality, system quality, and customer satisfaction with regard to the mobile banking service provided by private commercial banks. Rahi (2019) ranks scores greater than 4.51 as extraordinary, 3.51 to 4.50 as good, 2.51 to 3.50 as satisfying, and lower than 2.50 as unsatisfactory. This answer analysis rates respondents' degrees of agreement with each dimension.

4.5.1 Security

Strong security is necessary in order to deliver first-rate service and give clients peace of mind when transacting online. A wonderful service that is provided to the client is security.

Table 5 Respondents' Response on security

Items	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	N	%	N	%	N	%	N	%	N	%
The digital banking system of CBE is much secured.	14	4%	11	3%	17	5%	133	41%	149	46%
The digital banking of CBE has a well-protected.	24	7%	9	3%	31	10%	158	49%	102	32%
I am confident on digital banking system of this bank.	21	7%	19	6%	25	8%	112	35%	147	45%
The digital banking is comfortable application system.	14	4%	22	7%	21	7%	174	54%	93	29%
I consider my banking information is secreted.	24	7%	18	6%	41	13%	161	50%	80	25%
I rely on CBE's information security system	29	9%	15	5%	29	9%	171	53%	80	25%
Grand Mean 3.96 SD = .9001										

Source: Survey result, 2023

The grand mean score (3.96) in Table 5 is shown as being considered to be very good. It was intended to convey that it basically gives people better protection and privacy over their money in a very acceptable manner that they find pleasurable and comforting. Additionally, this table shows the one sample test result for itemized variables that showed a P value larger than 0.05. The mean scores for all latent variables are thus found to be significantly different. The dispersion of a given data collection is measured by the standard deviation. It shows how closely the data is grouped around the average. Subsequently, the values of standard deviations in the above table indicate the presence of less data variation of the response of on the surveyed customers. On the other hand, more than 80 % of the respondents have at least agreed representing digital banking system of CBE is well secured. It was confirmed by 87% of the total respondents stated that the digital banking system of CBE is much secured. In this study, 80% of the total respondents agreed that the digital banking of CBE has a well-protected and they are self-assured on digital banking system of this bank. Further, 80% of the sampled respondents they agreed that the digital banking is comfortable application system. It comes with its own high possibilities in customers in service oriented organization. It requires supposed and caution to implement the technology along with fulfilling customers' needs and wants (Alghizzawi et al., 2020).). On other hand, more than 74 % of the sampled respondents they agreed that 82% they consider their banking information are secreted and they rely on CBE's information security system. This shows that suitability of technology is the benefits of CBE's digital banking services. It shows adoption of electronic banking was beneficial if it is secured in banking sector. This study also found that ease application of technology are the benefits of CBE's digital banking services and customers are interested in closeness of banking transactions of CBE's digital banking services. Banks have the service quality in terms of security which is the secured technology by electronic channels. The majority of internet users restrict their online application like transactions and purchases because of concerns relating to privacy and security of their personal information. So it can be interpreted as security is one of the important factors that could influence business decisions online (Karjaluo, 2019).

4.5.2 Speed

The speed of digital banking in CBE was the main topic of this segment of study, with an emphasis on quick transactions, quick trade answers, and financial transactions. In this study, customers were asked about the speed of CBE's transactions, how quickly they received trade responses, financial or commercial transactions, how quickly they were able to address complaints about transactions, and how quickly they interacted with one another.

Table 6 Respondents' Response on digital banking speed

Items	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	N	%	N	%	N	%	N	%	N	%
It is easy to find what I need on digital banking.	23	7%	24	7%	22	7%	153	47%	102	32%
It is easy to get anywhere on the website of online banks.	30	9%	33	10%	28	9%	153	47%	80	25%
I am interested in Swift transactions of CBE.	29	9%	68	21%	25	8%	92	28%	110	34%
I receive rapid trading responses via CBE's digital banking services.	22	7%	74	23%	18	6%	116	36%	94	29%
I believe my business or financial transaction are well transacted in BE.	30	9%	69	21%	18	6%	116	36%	91	28%
CBE is quickly addressing my transaction issues based on its digital banking services.	34	11%	73	23%	20	6%	106	33%	91	28%
Grand Mean 3.61 SD = .9541										

Source: Survey result, 2023

According to the gathered and assembled data, the grand mean was discovered to be 3.61 and was considered to be quite nice. As a result, the study's key findings on the advantages of digital banking were its appropriateness, ease of use, assurance of banking integrity, transaction speed,

and usefulness for both personal and commercial purposes. According to Emad (2021), banks organizations had achieved notable success by implementing quick technology (speed) in their electronic banking systems.

This allowed more customers to benefit from it, making the relative advantage of the innovation more visible. This table also shows that one sample test result of itemized variables; which displayed greater than 0.05. So, it can be determined that the mean scores for all latent variables are significantly different. Standard deviation measures the dispersion of a given data set. It indicates how close to the average the data is clustered. Consequently, the scores of standard deviations in the above table indicate the presence of less data variation of the response of on the surveyed customers.

In this study, 79 % of sampled respondents have at least agreed that representing CBE used a good technology that is easy to find what they need on digital banking. This showed that customers are interested in Swift transactions of CBE. This shows that customers strongly designated that digital banking system act in personal best interest of customers; rapid trading responses, saving time, brings self-service banking, reliability, helpful for personal and business needs, closeness of banking transactions and universality and user-friendly system are the benefits of digital banking contribution in Ethiopia. One of the employees stated in the interview session as

‘‘ I’ve utilized CBE because I do a lot of financial transactions for my business, however networking is the issue. I can receive quick services if the network is operating well and its systems are quick. Despite this, telecom infrastructure makes it extremely challenging to handle all transactions in an efficient manner (R1).

Another client mentioned that

I had used e-services for my banking needs and that I believed it helped to streamline the transactions (R2).

In addition, a customer service expert stated that

"Of course, CBE has added several applications, including water, electricity, other utility services like DSTV and Canal +, and school payments. It has employed unique applications by adding several features that should be offered

to satisfy consumers while convincingly considering operational and financial constraints, particularly network issues" (E1).

On other hand, more than 60 % of them agreed that they interested in Swift transactions of CBE. They also said they receive rapid trading responses via CBE’s digital banking services and believe my business or financial transaction is well transacted in CBE. CBE is quickly addressing my transaction issues based on its digital banking services. It shows that customers receive rapid trading responses via CBE’s digital banking services. This displays that CBE could be treated as an innovation and performance-enhancing product that re-positioned the perception about the banking payments for the public services and association with corruptive practices in the public banking sector.

4.5.3 Digital banking Ubiquity (appearing everywhere)

The universality benefits of CBE's digital banking services were assessed in this study. Additionally, it evaluated how well CBE's digital banking services were used globally, how dependable they were, how user-friendly they were designed to be, how readily accessible they were, and how readily available they were.

Table 7 Respondents’ Response on digital banking Ubiquity

Items	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	N	%	N	%	N	%	N	%	N	%
There is instantaneous communications in CBE via its digital banking services.	31	10%	74	23%	24	7%	139	43%	56	17%
I believe CBE’s digital banking services are accepted system.	36	11%	69	21%	18	6%	107	33%	94	29%
Service Reliability is the benefits of CBE’s digital banking.	18	6%	52	16%	6	2%	173	53%	75	23%
CBE’s digital banking services holds universally accepted operating system.	20	6%	45	14%	3	1%	145	45%	111	34%
CBE’s digital banking services are user-friendly.	26	8%	70	22%	3	1%	140	43%	85	26%
CBE’s digital banking services are easily available everywhere.	14	4%	37	11%	5	2%	132	41%	136	42%
Grand Mean 3.67 SD = .9637										

Source: Survey result, 2023

Table 7 shows that the rand mean score (3.67) for ubiquity (appearing everywhere) friendly that was regarded as fantastic (very good). It meant that acceptable internationally or universality is the advantage of CBE's digital banking services and customers believe CBE's digital banking or electronic transaction services are wide-reaching acknowledged system. This table also illustrates that one sample test result of itemized variables; which exhibited greater than 0.05. Consequently, it can be established that the mean scores for all latent variables are significantly different. Standard deviation measures the dispersion of a given data set. It indicates how close to the average the data is clustered.

This study found that 83 % of sampled respondents indicated that CBE's digital banking services are easily available everywhere. It found that customer slightly believed that CBE's digital banking services are easily available everywhere. In addition, 79 % of sampled customers or respondents indicated that CBE's digital banking services holds universally accepted operating system. It shows CBE needs a long way to use a single and universally applicable digital banking system. Additionally, 77 % of sampled customers specified that service reliability is the benefits of CBE's digital banking services. In addition, they could not get CBE's digital banking services benefits wherever they go. This shows that service reliability is the benefits of CBE's digital banking services. In addition, this study found that CBE's digital banking services holds universally accepted operating system. This study also found that CBE's digital banking services are user-friendly. One of the customers stated in the interview session as

"One cannot replace digital banking services because there are numerous specialized windows to handle customer transactions and these specialized windows help to address customer needs." Based on its digital banking services (C4), CBE is responding rapidly to our transactional difficulties.

CBE's digital banking services are worldwide accepted system. CBE has universally accepted transaction banking system. This displays that the traditional banking run-through the commercial instruments deposited in the bank were only physically presented to the drawee bank to get the amount of the money debited to the drawer's account, which was an awkward process and resulted in the deferment in the clearing of cheques (Tilahun, 2016).

4.5.4 System Availability

Banking digital banking is assessed based on its system obtainability and the advantages of CBE's digital banking services such as pledge of banking honesty, inevitability of banking information system, protected personal info, easy to practice or apply, easy to learn and digital banking services applications.

Table 8 Respondents' Response on system availability

Items	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	N	%	N	%	N	%	N	%	N	%
Due to digital banking system, I feel this bank is near to me.	17	5%	50	15%	8	3%	128	40%	121	37%
I can get CBE's digital banking services benefits wherever I go.	23	7%	48	15%	13	4%	106	33%	134	41%
Digital banking system of this bank can be certainly obtained.	36	11%	62	19%	20	6%	110	34%	96	30%
Digital banking system of this bank can be always achieved.	18	6%	41	13%	33	10%	168	52%	64	20%
Grand Mean 3.74 SD = .9719										

Source: Survey result, 2023

This data shows that the grand mean for system availability was found as 3.74 and it was rated as very good. This table also displays that one sample test result of itemized variables; which exhibited greater than 0.05. Consequently, it can be determined that the mean scores for all latent variables are significantly different. Standard deviation measures the dispersion of a given data set. It indicates how close to the average the data is clustered. Therefore, the values of standard deviations in the above table indicate the presence of less data variation of the response of on the surveyed customers.

In consequence, the results show that system availability contributes to service reliability. High reliability increases the adoption of agency banking. Complaints resolution time does not affect the adoption of agency banking. It assured the truthfulness, inevitability of banking information system, protected personal banking information, easy to practice or applies, easy to learn and digital banking services applications. Reliably, Zooohan and Win (2019) anticipated that when users of digital banking believe that the service has provided them with expected advantages, these users will become satisfied with that particular Digital banking service.

In this study, 77% of sampled respondents stated that they feel this bank is near to them due to e-banking system. It shows it supported this relationship between perceived usefulness and satisfaction empirically and also proposed that perceived usefulness is a potential direct determinant of satisfaction. In this survey, 74% of sampled respondents stated that they can get CBE's digital banking services benefits wherever they go. This showed that they can access my account 24 hours and seven days a week using mobile banking of CBE. In addition, this study found that 72 % of the total respondents stated that digital banking system of this bank can be always achieved. It shows that quite certain what to expect from banking information system are the benefits of CBE's digital banking services. Next high mean score showed that customer believed assurance of banking integrity is the benefits of CBE's digital banking services. One branch manager communicated as

"CBE has developed new banking competencies, primarily in electronic banking, that address the need to upgrade dated knowledge and skills." New digital banking services have allowed CBE to expand its current service delivery platforms, which have mostly eliminated traditional service management failures (M1).

CBE's digital banking services applications are not easy or so difficult. This study found from interviewees that states that the bank benefits by adopting e banking in its operation. The main benefits to banks are cost savings, reaching new segments of the population, efficiency, enhancement of the banks reputation and better customer service and satisfaction. CBE's digital banking services are marginally easy to practice or apply and CBE's digital banking new approaches are very easy to learn.

4.5.5 Control

This study assessed the system control mechanisms of digital banking. Over the years, process based techniques have evolved from being used as just one-off tools applied for a particular purpose within the organization, such as costing or business improvement, and have become an all-embracing advanced planning, monitoring and control system which includes quality management philosophies – business process management

Table 9 Respondents’ Response on control

Items	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	N	%	N	%	N	%	N	%	N	%
CBE has well organized system control mechanisms.	30	9%	56	17%	34	11%	142	44%	62	19%
Digital banking system of this bank can be controlled virtually.	21	7%	53	16%	36	11%	136	42%	78	24%
Digital banking system of this bank helps to regulate virtually.	16	5%	54	17%	45	14%	152	47%	57	18%
Digital banking system of this bank creates opportunities for monitoring.	29	9%	51	16%	36	11%	140	43%	68	21%
Grand Mean 3.54 SD = .9629										

Source: Survey result, 2023

Table 8 displays that the rand mean score (3.54) for system control that was rated as very good. This table also displays that one sample test result of itemized variables; which exhibited greater than 0.05. So, it can be determined that the mean scores for all latent variables are significantly different. Standard deviation measures the dispersion of a given data set. It indicates how close to the average the data is clustered. Consequently, the values of standard deviations in the above table indicate the presence of less data variation of the response of on the surveyed customers. .

It also included Brings self-service banking are the benefits of E-money intention; e-money intention save time, its use CBE's digital banking services in the future and its supports on personal and business needs. It meant that CBE tries to disseminate accurate, relevant and complete information. The highest responses show that digital banking system of this bank can be controlled virtually. It also stated that digital banking system of this bank helps to regulate virtually customers are planning to use CBE's digital banking services in the future and high response displays that e-money intention supports their personal and business needs. It has user friendly mobile banking format that can produce appropriate banking transactions. The above table shows the responses of sampled respondents on CBE's information quality. Perera and Priyanath (2018) found that accuracy, relevance, completeness, currency and dynamic content are examples of characteristics of desirable content. AL-Hawary and Hussien (2017) suggest that the features of a virtual organization are processes transcend the boundaries of a single form and are not controlled by a single organizational hierarchy. Digital services are a term applied to both the tools used to build easy-to-integrate web-based applications and to the underlying technology standards on which they rely.

4.5.6 Customer Satisfaction

This study considered customers' CBE's digital banking services satisfaction level. Additionally, it incorporated performance CBE's digital banking services, satisfaction level of customers in terms of various rang of CBE's digital banking services, their interest in CBE's digital banking services and their fulfillment with CBE's digital banking system, workforces and digital banking system management.

Table 10 Respondents' Satisfaction Level

Items	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	N	%	N	%	N	%	N	%	N	%
I am satisfied with overall online bank's products and services.	17	5%	66	20%	45	14%	131	40%	65	20%
I am generally pleased with this bank's online services.	25	8%	62	19%	43	13%	109	34%	85	26%
I intend to continue using the online banking.	16	5%	65	20%	25	8%	148	46%	70	22%
I would like to say positive things about online banking to other people.	19	6%	61	19%	25	8%	144	44%	75	23%
I am completely happy with CBE that is providing alternative banking services.	8	3%	62	19%	27	8%	160	49%	67	21%
I am satisfied with the customer support provided by CBE.	16	5%	62	19%	34	11%	145	45%	67	21%
Grand Mean 3.57 SD = .9878										

Source: Survey result, 2023

Table 11 shows that the rand mean score (3.57) for customer satisfaction that was rated as very good. This data also displays that one sample test result of itemized variables; which exhibited greater than 0.05. Subsequently, it can be established that the mean scores for all latent variables are significantly different. Standard deviation measures the dispersion of a given data set. It indicates how close to the average the data is clustered. It meant that customers are relatively satisfied, willing to pay higher service charge for digital banking system, recommend their

families and relative, pleased in the current available bank products and services provided by CBE's digital or electronic banking system and application, create healthy relation with, create long term relation with CBE and want to stay long time with CBE due to technology based banking transactions.

The data showed that more than 70 % of the total respondents indicated that they would like to say positive things about online banking to other people. In regarding to customer satisfaction, the majority of the respondents are satisfied with mobile banking system of CBE, and some of them are willing to pay higher service charge for Mobile banking system. The data displayed that more than 70 % of the total respondents directed that they are completely happy with CBE that is providing alternative banking services. Thus is basically related to adoption of technology to banking system, Customers need such kind of adoption system for their personal and organizational interest. Further, 67 % of them stated that they intend to continue using the online banking. It means that doing business with CBE's digital banking services makes them very happy. In addition, the majority of them recommend their families and relatives to use digital banking and some are pleased in the current available bank products and services provided by CBE's mobile banking system and application. In the same way, Serrah and Maideen (2022) stated that the need for lower costs and higher revenues. This study suggested that adoption technology helps to attract customers and retain them for long time. However, Perera and Priyanath (2018) found banks have lack of customers trust in the initiatives and similar challenges related to banking

The grand means shows that the four independent variables have at least agree or more than 4 indicating that CBE's digital banking are rated as very good. However, customer satisfaction has lower mean than digital banking dimensions. It meant customers like CBE's efforts to assure digital banking integrity, certainly, secure personal privacy and promises and commitments; customers like CBE;s efforts the application of information system (IS) in its banking service that contributes to its success and presenting perceived usefulness of its services. In most cases, CBE's attempts to provide accurate, relevant and complete mobile banking with dynamic content and its system is ease to use, effective, user-friendly and usable.

4.6 Inferential Analysis

To evaluate the hypothesis in this study, inferential analysis was conducted. In this study, correlation analysis employing the well-known Karl Pearson Correlation method was employed to ascertain the kind of relationship that existed between the independent variables and the dependent variable. The null hypothesis can be accepted or rejected based on the p-values that were identified and shaped the foundation.

4.6.1 Correlation Analysis

Correlation analysis was used to assess the link between the dependent and independent variables. The Pearson Product-Moment Correlation Coefficient measures the degree of relationship between two variables.

Table 11 Correlation Test Analysis

		<i>Security</i>	<i>Speed</i>	<i>Ubiquity</i>	<i>System Availability</i>	<i>Control</i>	<i>Customer Satisfaction</i>
Security	Pearson Correlation	1	.531**	.573**	.481**	.334**	.531**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	324	324	324	324	324	324
Speed	Pearson Correlation	.531**	1	.786**	.485**	.347**	.571**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	324	324	324	324	324	324
Ubiquity (appearing everywhere) friendly	Pearson Correlation	.573**	.786**	1	.583**	.342**	.586**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	324	324	324	324	324	324
System Availability	Pearson Correlation	.481**	.485**	.583**	1	.226**	.486**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	324	324	324	324	324	324
Control	Pearson Correlation	.334**	.347**	.342**	.226**	1	.498**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	324	324	324	324	324	324
Customer Satisfaction	<i>Pearson Correlation</i>	<i>.531**</i>	<i>.571**</i>	<i>.586**</i>	<i>.486**</i>	<i>.498**</i>	<i>1</i>
	<i>Sig. (2-tailed)</i>	<i>.000</i>	<i>.000</i>	<i>.000</i>	<i>.000</i>	<i>.000</i>	
	N	324	324	324	324	324	324

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Survey result, 2023

This study started out by doing a correlation analysis to see how five different variables related to digital banking and consumer satisfaction. As a result, this study discovered a substantial and positive correlation between consumer satisfaction and digital banking security ($r=.531$). Similar findings were made by Serrah and Maideen in their study from 2022, and they concluded that they point to increased customer satisfaction, customer retention.

The results of this study were similar since there is a substantial and positive correlation between customer satisfaction and the speed of digital banking ($r=.571$). According to research, Zoonan and Win (2019) discovered a favourable and substantial correlation between expectancy for digital banking and customer satisfaction.

As a result, this study used a correlation analysis to determine whether the prevalence of digital banking and customer satisfaction are related. Due to the favourable and substantial correlation between customer satisfaction and digital banking E ubiquity ($r=.586$), this study also came to similar conclusions. Similar findings were made by Ahmad and Abdel-Aziz (2019), who discovered a favourable and significant correlation between it and customer satisfaction.

This study also came to similar conclusions because there is a moderate, significant and positive correlation between system availability ($r=.486$) and customer satisfaction. Similar research was conducted by Serrah and Maideen in 2022, and they discovered that adopting e-money is both practicable and beneficial.

Finally, this study came to similar conclusions since there is a substantial and positive correlation between customer satisfaction and digital banking control ($r=.498$). Ahmad and Abdel-Aziz (2019) evaluated and confirmed a finding of a positive and substantial association between digital banking control and customer satisfaction.

4.6.2 Regression Analysis

Through F and P values, linear multivariate analysis was performed to consider the statistical significance of each independent variable's influence on the dependent variable.

4.6.2.1 Assumptions and Diagnostic Test

The assumptions, which included normality, multicollinearity, and autocorrelation tests, and the diagnostic test results provided above, indicate that the average value of the error term is zero ($E(u_t) = 0$). The assumptions for linear regression were found to be true after all relevant assumptions had been properly evaluated.

I. The first supposition that needs to be proven is that the average value of the error term is zero ($E(u_t) = 0$). In fact, if a constant component is included to the regression equation, this assumption won't ever be disproven. Because the constant term (i.e.) was incorporated into the regression equation, it is expected that the average value of the error term in this study will be zero.

II. Test for multicollinearity

Multicollinearity is the term used to describe a precise (or nearly exact) linear relationship between two or more input variables (Su et al., 2015).

Table 12 Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
Security	.609	1.642
Speed	.368	2.721
Ubiquity (appearing everywhere) friendly	.313	3.195
System Availability	.627	1.594
Control	.844	1.184

Source: Survey result, 2023

The cumulative effect of regressor dependence on each term's variance was calculated in this study using the VIF (Variance Inflation Factor). It is evaluated using VIF data that demonstrate the absence of multicollinearity. If any VIF findings are more than 5 or 10, it indicates that the corresponding regression coefficients are not reliably estimated due to multicollinearity, according to this study's use of actual experience (Su et al., 2015). The results of the analysis

show that there is no multicollinearity or considerable degree of relationship between variables. The table above demonstrates that the VIF values for five factors were discovered to be either below 5 or above 10. Since no collinearity was found in the data, it may be concluded that there is no collinearity present.

III. Test of Normality

The descriptive statistic of the Kurtosis and Skewness statics calculation used in this study's normality test reveals that the distribution is normal because Kurtosis and Skewness are between -2 and +2, indicating that the data is normally distributed and has a manageable variance for use in further analysis. It is crucial to know if a distribution is skewed because it influences the statistics we choose to use to analyze the information we have acquired.

Instead of ratio or interval data, researchers commonly apply analyses created for nominal or ordinal data for skewed distributions.

Table 13 Normality Test Result

Descriptive Statistics					
	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Security	324	-1.116	.351	1.285	.270
Speed	324	-.682	.351	.014	.270
Ubiquity (appearing everywhere) friendly	324	-.751	.351	-.053	.270
System Availability	324	-.739	.351	-.158	.270
Control	324	-.503	.351	-.491	.270
Customer Satisfaction	324	-.670	.351	-.031	.270
Valid N (listwise)	324				

Source: Survey result, 2023

The assumption of normalcy, on which many statistics depend, is shattered if the distribution is considerably skewed. To put it another way, skewness relates to a distribution's lack of symmetry, whereas kurtosis refers to how peaked or flat the distribution's centre is and how broad its tails are. In contrast to a low kurtosis distribution, which has a rounder or flatter peak and shorter tails, a high kurtosis distribution has a sharper peak and longer, flatter tails.

IV. Test for Autocorrelation

The following regression assumption makes the assumption that the covariance between the error terms throughout time (or cross-sectional, for that type of data) (or both, for multiple linear regressions disturbance terms) is equal to zero.

Table 14 Autocorrelation Test: Durbin Watson

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	<i>Durbin-Watson</i>
1	.712 ^a	.507	.499	.539	1.515

a. Predictors: (Constant), Control, System Availability, Security , Speed, Ubiquity (appearing everywhere) friendly

b. Dependent Variable: Customer Satisfaction

Source: Survey result, 2023

In this survey, the traditional Durbin-Watson Test was used as an assumption test to verify the existence of autocorrelation. In other words, it is anticipated that the errors will not be correlated. If the errors are not uncorrelated with one another, it would be said that they are "auto correlated" or "serially correlated." Due to the fact that 1.515 students earned scores between 1.5 and 2.5, this assumption needs to be verified.

4.6.2.2 Regression Test Result

Table 15 Regression Test Results – Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.712^a	.507	.499	.539

a. Predictors: (Constant), Control, System Availability, Security , Speed, Ubiquity (appearing everywhere) friendly

b. Dependent Variable: Customer Satisfaction

Source: Survey result, 2023

Model Summary

In this study, the model summary was thoroughly analyzed. Calculating the value of R2 reveals how much the independent elements in digital banking have an impact on the dependent variable, customer satisfaction. Below is a diagram and explanation of a linear regression with five independent variables and one dependent variable. The dependent variable, customer satisfaction, was explained by the entire set of determinant factors for the five independent variables by 50.7% ($R^2 = .507$), as seen in the table above. This implies that, while other elements not considered in this study account for the remaining (100 - 50.7) 49.3% of the customer satisfaction level at the bank, or 50.7% of it, the remaining factors account for other aspects.

Table 16 Regression Test Results – ANNOVA

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	94.959	5	18.992	65.428	.000^b
	Residual	92.305	318	.290		
	Total	187.264	323			

a. Dependent Variable: Customer Satisfaction

b. Predictors: (Constant), Control, System Availability, Security , Speed, Ubiquity (appearing everywhere) friendly

Source: Survey result, 2023

ANOVA

The second table's result $F = 65.428$ and sig. score value (.000) demonstrate the statistical significance of the positive effect the determinant five criteria have on customer satisfaction. As a result, this investigation rejects the null hypothesis.

Table 17 Regression Test Results – Coefficient

Model		Coefficients ^a				
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.459	.182		2.522	.012
	Security	.175	.051	.173	3.435	.001
	Speed	.158	.056	.182	2.800	.005
	Ubiquity	.139	.065	.151	2.146	.033
	System Availability	.138	.042	.162	3.253	.001
	Control	.237	.035	.289	6.746	.000

a. Dependent Variable: Customer Satisfaction

Source: Survey result, 2023

Coefficients

According to the multivariate analysis in the above table, security have a positive and significant influence on consumer satisfaction ($\beta=.175; .001$). Benedict (2020) found that customer happiness and security have a positive and significant association.

According to the findings of this study, customer satisfaction and banking digital banking speed have a positive and significant relationship ($\beta=.158; .005$). Speed and customer satisfaction have a favourable and considerable impact, according to Emad (2021).

Then, using regression analysis, this study examined the impact of digital banking on ubiquity (appearing everywhere) and customer satisfaction. The outcome demonstrates that it has a favourable and considerable impact on customer satisfaction ($\beta=.139; .033$). Benedict (2020) found a positive and significant effect of it and customer satisfaction.

Regression analysis was used in this study to examine the relationship between customer satisfaction and the availability of the banking digital banking system. The outcome shows that there is a substantial and positive relationship between customer satisfaction and system availability in banking and digital banking ($\beta=.138; .001$). It has a favourable and considerable impact on consumer satisfaction, according to Rahi (2019).

Finally, this study aimed to use regression analysis to examine the relationship between customer satisfaction and banking digital control. The outcome demonstrates that there is a substantial and positive relationship between customer satisfaction and the prevalence of digital banking ($\beta=.237$; .0001). It had a favourable and large impact on customer satisfaction, according to Emad (2021).

4.6.2.3 Model Specification

The study's multiple linear regression models is based on the following theoretical regression model.

$$Y = a + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + e$$

$$Y = a + .175x_1 + .158x_2 + .139x_3 + .138x_4 + .237x_5 + e$$

a is the intercept term- it gives the mean or average effect on Y of all the variables excluded from the equation, although its mechanical interpretation is the average value of Y when the stated independent variables are set equal to zero. β_1 , β_2 , β_3 , β_4 and β_5 refer to the coefficient of their respective independent variable which measures the change in the mean value of Y, per unit change in their respective independent variables.

- x_1 = security
- x_2 = speed
- x_3 = ubiquity
- x_4 = system availability
- x_5 = control

4.7 Discussion

4.7.1 Security

The results of this study showed that customer satisfaction and security had a positive and significant link ($r=.531$) by means of correlation analysis. Similar test or investigation was done using multivariate regression analysis, findings of this study indicated that security had a positive and significant effect on customer satisfaction ($\beta=.175$; .001). The findings of the

hypothesis test indicate that the security has a favourable and significant impact on customer satisfaction. This hypothesis result is strengthened by the research of Khokhar et al., (2019) that proves has positive and significant effect on customer satisfaction. In agreement with study, Rahi (2019) found a positive and significant effect of it and customer satisfaction. In this regard, one of the respondents in interview sessions stated that

Along with cutting service costs, the security of our consumers is also necessary. Since our system is very safe and we will keep track of our clients' transactions and financial information, we think that will benefit. It is expected that we must satisfy them because service security is a key indicator of quality services. The effectiveness and efficiency of CBE's digital banking services will be improved (M2).

The study above reveals that consumer satisfaction with digital banking in CBE is significantly impacted by test security. If the security accepted by consumers is same as expected, then the security is considered good and satisfying. This means that the consumer will conduct transactions on the banking system or site in accordance with the expected security which can be viewed from various aspects such as security in the transaction and the confidentiality of data or maintaining the privacy of consumers' personal information (Emad, 2021). Therefore, it is possible to conclude that banks are able to achieve potential gain by having secured system as a main digital future. Satisfaction is a person's feelings of pleasure or disappointment resulting from comparing a product's perceived performance (or outcome) in relation to his or her expectation (Rahi, 2019).

4.7.2 Speed

This study used a correlation analysis to look at the connection between customer satisfaction and the speed of digital banking in order to achieve the study's goal. As a result, this study discovered a substantial and positive correlation between customer satisfaction and the speed of digital banking ($r=.571$). Additionally, multiple regression analysis was employed in this study to investigate the relationship between speed and customer satisfaction. The results of the multiple regression test for this study showed that speed ($\beta=.158$; .005) and customer satisfaction had a positive and significant relationship.

The hypothesis test results also show that speed e has a moderate, positive and significant impact on customer satisfaction. This hypothesis is supported by the research of Khokhar et al., (2019) found that proves speed has positive and significant effect on customer satisfaction. Same as before, the result can be explained through the analysis test. If the speed accepted by consumers is as expected, then it is considered good and satisfying. This means that the consumer will conduct transactions on banking site in accordance with the expected speed which consumers viewed from various aspects such as the information systems used is quick and speedy. Emad (2021) also emphasized that it is imperative for bank management to intensify investment in ICT products to facilitate speed, convenience, and accurate services, or otherwise lose out to their competitors. Customers have found doing business online simple and speedy and have become very comfortable with the arrangement. In view of that, the newly adapted technology called as internet banking is of quite eminence to customers and banks because it gives great advantages to the customer and the bank (Rahi, 2019).

4.7.3 Ubiquity (appearing everywhere)

Additionally, this study came to similar conclusions because there is a moderate and positive correlation between customer satisfaction and the prevalence of digital banking ($r=.586$). Additionally, this study used regression analysis to look at the relationship between customer satisfaction and the prevalence of digital banking. The outcome shows that there is a substantial and positive relationship between customer satisfaction and the prevalence of digital banking ($\beta=.139; .033$).

Khokhar et al., (2019) found a positive and significant effect of it and customer satisfaction. A result of a positive and significant relationship between digital banking ubiquity and customer satisfaction was tested and verified by Emad (2021). The rapidly increasing information and communication technology (ICT) is bumping the front door of every organization in the world. Technological innovations play a crucial role in banking industry by creating value for banks and customers, that it enables customers to perform banking transactions without visiting a brick and mortar banking system. As result, digital systems are vigorously and swiftly stretched across the globe (Benedict, 2020).

4.7.4 System Availability

The availability of the digital banking system ($r=.486$) and customer satisfaction were found to have a moderate, positive and substantial association, which was the study's second goal. Additionally, regression analysis was used in this study to support the relationship between customer satisfaction and the ease of digital banking. The outcome demonstrates a substantial and positive relationship between customer satisfaction and the availability of the banking digital banking system ($=.136; .002$). The elements that drive or affect costs that are influenced by system availability can be discovered by having a thorough awareness of the activities that are carried out, their classification, the cost make-up, and their unit costs (Rahi, 2019).

Benedict (2020) carried out similar investigation and found that adopting digital banking are level-headedness and suitability. Khokhar et al., (2019) found a moderate, positive and significant effect of it and customer satisfaction. The main motive for the development in digital banking services is that they reduce costs and enhance profits for banks, while enriching customer convenience through the ease and rapidity with which transactions are executed (Rahi, 2019). Internet banking helps banks reduce operating costs while diminishing the need for a wide territorial network. Providing this type of service has become a strategic component of any banking institution seeking to improve quality of services (Emad, 2021).

4.7.5 Control

Similar findings were made in this study, which discovered a substantial and positive association between customer satisfaction and digital banking control ($r=.498$). Regression analysis was then used in this study to confirm the relationship between digital banking control and customer satisfaction. The outcome demonstrates a substantial and positive relationship between customer satisfaction and banking digital banking control ($=.237; .0001$). As a result, this study used a correlation analysis to see whether there is a connection between customer satisfaction and digital banking E-money intention. Controlling redundancy in data storage, development, and maintenance operations is beneficial. Additionally, it allows for data sharing between multiple users and limits unwanted access to data (Benedict, 2020). In a similar vein, Emad (2021) discovered a favourable and significant correlation between consumer satisfaction and digital banking control. It had a favourable and large impact on customer satisfaction, according to Emad (2021). In today's dynamic and fiercely competitive corporate environment, customer

retention is viewed as a vital component of market competition. As a very market-oriented organization that works closely with its clients to identify and meet their demands, banks have a unique contribution to make (Benedict, 2020).

Table 18 Summary of Hypothesis Testing

Variable	Hypothesis	R	β	Sig.	Result
Security	H ₁ - Security has a positive and significant effect on customer satisfaction in digital banking in banking industry	.531**	.175	.001	Supported
Speed	H ₂ – Speed has a positive and significant effect on customer satisfaction in digital banking in banking industry	.571**	.158	.005	Supported
Ubiquity	H ₃ - Ubiquity (appearing everywhere) has a positive and significant effect on customer satisfaction in digital banking in banking industry	.586**	.139	.033	Supported
System Availability	H ₄ - System Availability has a positive and significant effect on customer satisfaction in digital banking in banking industry	.486**	.138	.001	Supported
Control	H ₅ – Control has a positive and significant effect on customer satisfaction in digital banking in banking industry	.498**	.237	.000	Supported

Source: Survey result, 2023

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The final section of the study covers the concluding chapter, which includes a summary of the results, a conclusion, and appropriate suggestions based on the study's results.

5.2 Key Findings Summary

In order to accomplish its objectives, this study found that:

- Security has a favourable and significant influence on customer satisfaction ($\beta=.175$; $.001$), as well as a favourable and significant relationship with customer satisfaction ($r=.531$, $p.0001$).
- Speed of digital banking have a favourable and significant influence on customer satisfaction link ($r=.571$). Additionally, speed ($\beta=.158$; $.005$) and customer satisfaction have a favourable and considerable impact.
- Ubiquity (appearing everywhere) has a favourable and significant influence on customer satisfaction; a positive and significant influence it on customer satisfaction ($r=.586$), as well as a positive and significant relationship between customer satisfaction and the prevalence of digital banking ($\beta=.139$; $.033$).
- Customer satisfaction and the System availability of the digital banking system are positively and significantly correlated ($r=.486$). Additionally, there is a positive and substantial relationship between customer satisfaction and the availability of the digital banking system ($\beta=.136$; $.002$).
- Customer satisfaction and digital banking control have a favourable and substantial link ($r=.498$). The study also demonstrates a substantial and positive relationship between customer satisfaction and banking digital banking control ($\beta=.237$; $.0001$).

5.3 Conclusions

Customers of banks also benefit from lower costs, simpler information access, greater comfort, and time-saving transactions due to the ability to check on many accounts at once. As a result,

this study draws the conclusion that technologically secured transactions or security will improve customer satisfaction.

The ownership by the government, the financial sustainability, and the institutional sustainability of a commercial electronic system would all be strongly related to the sustainability element of that system. This is due to the fact that ubiquity (appearing everywhere) will enhance customer satisfaction.

The bank has pushed for the introduction of various cutting-edge services and the adoption of cutting-edge technology. It must therefore give more weight to banking e-payments and e-money purposes that increase customer satisfaction. As a result, this study concludes that system availability will increase customer satisfaction.

The customers' knowledge of mobile banking services includes highlighting the mobile services that customers use most frequently and seldom. As a result, this study concludes that control of transactions will increase customer satisfaction.

Infrastructure, social and economic conditions, and legal and regulatory frameworks are examples of external variables that must exist for new and advanced technology to be accepted. Additionally, it calls for highly skilled labor, state-of-the-art equipment, and a committed top management. As a result, this study came to the conclusion that, in the banking industry, digital banking speed has a significant impact on consumer satisfaction.

5.4 Recommendations

Based on the results of research and discussion, the suggestions are as follows:

- This study recommends that CBE make some efforts in the areas of security assurances, system assurance, control and monitoring, and data confidentiality based on the viewpoints of the respondents. A higher guarantee of data control, availability, security, and confidentiality is anticipated from the organization. The banking industry's control, promptness, system accessibility, and security all have an effect on customer satisfaction.
- According to this study, CBE should be able to update its database system to ensure that users do not face problems and do not have to wait an excessive amount of time for transactions to be processed throughout all of its branches.

- According to data research, digital banking, a service that enables users to pay fees, taxes, and other debts to the government, is resulting in significant savings for enhancing Ethiopia's economic and investment climate. This study suggests that CBE create a rapid digital banking system as a result. Access to information regarding credit cards, payment accounts, and other personal information should be quick and easy online.
- Commercial banks may increase the adoption of banking technology; this includes preparing to launch a new product, conducting market research, and identifying the best compatibility characteristics from the perspectives of citizens (meeting expectations and ensuring quality) and service providers (meeting expectations and altering perception). When deciding whether or not a citizen is satisfied with the caliber of internet business services, all these criteria are taken into account.
- The study contends that CBE requires that the costs associated with using digital banking be adequately bundled in accordance with alluring offers made by the Bank and be competitive with those of rivals.
- Based on the test's findings, it is known that the prevalence of digital banking is the biggest factor influencing customers' satisfaction. As a result, CBE must be able to increase the utility of its E-Money products so that customers can experience the other convenience and usefulness of digital banking that CBE can provide.
- The researcher also suggests that CBE offer customers a system and technology that is appropriate for them in terms of locations or facilities where they can top up their digital banking accounts in areas that are convenient for transportation. They can also collaborate with restaurants to enable customers to make payments using digital services outside of retail networks.

5.5 Implications for Stakeholders

Every customer wants their needs to be met quickly, safely, and easily. One of them is the online banking system, which has improved in terms of privacy and security, speed, which is available everywhere, control, and system availability, as well as access and communication costs being lower, computers becoming faster and more affordable, and most importantly, an increase in the amount of information and entertainment. The development of technology has changed how

consumers interact with one another, live their lives, and quickly transact money. Under Ethiopia's banking online service delivery system, customers can simply use CBE or commercial banks, where the electronic distribution of services frequently delivers greater comfort than the direct engagement. Banks are now creating a better system that is swift and secure.

A better online banking environment is being created by banks in a quick and secure manner, allowing both people and company owners to conveniently and freely transfer money and manage their online operations while also providing a secure and comfortable online banking environment. Government, international organizations, and development organizations might promote the use of e-payments as a more sophisticated instrument that benefits service providers rather than just as a technology. Driving incentives should also be taken into account in order to maintain a system's functionality and raise its adoption rate. In order to meet citizens' expectations for the ultimate banking experience, banks can quickly adapt new technologies by identifying citizens' wants and being compatible with existing citizens' values.

Banks are quickly and securely creating a better online banking environment that enables both individuals and business owners to effortlessly and freely move money and manage their online operations in addition to offering a secure and comfortable online banking environment. Instead of only promoting e-payments as a technology, the government, international organizations, and development organizations might do so as a more sophisticated tool that helps service providers. Driving incentives must also be included in order to keep a system effective and increase adoption. Banks may quickly adopt new technology to match citizens' expectations for the best banking experience by determining what they want and being in line with current citizen values.

Ethiotelecom and other national stakeholders may encourage e-commerce to give companies the chance to increase online sales and enhance digital banking operations. The current cash-based payment system in Ethiopia has to be replaced by an electronic one. The use of digital banking systems significantly increased sales of goods and services, which boosted the importance of electronic payments as a payment system component. The National Bank of Ethiopia may issue unchanging and maintainable digital banking laws and regulations to promote the use of non-cash payment instruments, ensure the security and efficiency of the payment system, and lower the risk of robbery, fraud, money laundering, tax evasion, illicit activities, including trafficking and forging, and other criminal activities that are law and strategies.

5.6 Future Studies

This study makes recommendations for future research, such as increasing sample numbers or choosing locations with a variety of responders. Customer satisfaction may also be impacted by other elements such as practicality, user friendliness, service quality, trust influence, and information quality. It can be used as a reference while analyzing the study's illogical variables. Currently, we are moving toward a digital world that is largely paperless, and banks want to follow suit. More research is therefore urged on the following topics: the contribution of mobile banking to the GDP of the economy; the interaction between mobile banking and other financial services; and how mobile banking can be integrated with internet banking taking the paperless approach the banks would like to pursue.

It is highly recommended that in future research techniques, the data collection use alternative approaches that enhance and provide answers to hidden hazards and challenges in digital banking, both internal and external, with regard to various concerns, particularly those connected to future electronic payments.

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ANNEX

Appendix I - Questionnaire



ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE (*Customer Survey*)

Dear Respondents,

I am, Eyasu Fekadu, a postgraduate student of Addis Ababa University. I am conducting an academic research to precede my MA in marketing study. This survey is conducted as a partial fulfillment of the award of Master of Marketing Management at Addis Ababa University. The general purpose of the study is to assess the effect of digital banking on customer satisfactions in Commercial Bank of Ethiopia in Addis Ababa. A survey questionnaire on “Effect of Digital banking on Customer Satisfactions: The Case of Commercial Bank of Ethiopia in Addis Ababa.”

I kindly request your participation in this survey by filling up this questionnaire. I would also like to inform you that any of your responses will be maintained confidentially.

Thank you very much in advance for your cooperation!

General Direction

- Do not write your name in any part of the questionnaire
- Your frank response is vital for the success of the study
- Please put a “√” mark on your choices
- Give a short and precise answers for questions followed by a blank space

Best Regards,

Eyasu Fekadu

Tel. No. 0913 98 51 27

Part I- Personal Demographic Information of respondent

1. Gender

Male <input type="checkbox"/>	Female <input type="checkbox"/>
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2. Age group

Less than 20 years <input type="checkbox"/>	41 to 50 years <input type="checkbox"/>
20 to 30 years <input type="checkbox"/>	51 to 60 years <input type="checkbox"/>
31 to 40 years <input type="checkbox"/>	61 years & above <input type="checkbox"/>
3. The highest level of education you achieved

Below grade 12 <input type="checkbox"/>	first Degree <input type="checkbox"/>
12th Grade complete <input type="checkbox"/>	Second Degree (Master's Degree) <input type="checkbox"/>
Certificate <input type="checkbox"/>	Third Degree (PhD) <input type="checkbox"/>
College Diploma <input type="checkbox"/>	
4. Employment

Government Organization <input type="checkbox"/>	Self-employed <input type="checkbox"/>
Private Organization <input type="checkbox"/>	Not employed <input type="checkbox"/>
Student <input type="checkbox"/>	

Part II-consumer's perception about the bank service delivery system

5. How long is it since you have started using Digital Banking service

Less than 12 months <input type="checkbox"/>	between 5 to 7 years <input type="checkbox"/>
Between 1 and 3 years <input type="checkbox"/>	between 7 to 10 years <input type="checkbox"/>
Between 3 to 5 years <input type="checkbox"/>	more than 10 years <input type="checkbox"/>
6. How long is it since you have started using Electronic banking

Less than 12 months <input type="checkbox"/>	between 5 to 7 years <input type="checkbox"/>
Between 1 and 3 years <input type="checkbox"/>	between 7 to 10 years <input type="checkbox"/>
Between 3 to 5 years <input type="checkbox"/>	more than 10 years <input type="checkbox"/>

7. Before the introduction of e banking products, how frequent in a month do you visit the bank for transaction?

Rarely Very frequently Frequently

Part III- The following statements relate to your feelings about the banks Digital banking service. Please give your score based on service you received at the bank

Please describe to what extent you implement the listed activities by circling numbers grades

Note : - 5= Strongly Agree, 4= Agree, 3= Disagree, 2= Strongly Disagree, 1= Neutral

No	N	Digital banking Service quality	1	2	3	4	5
1	Privacy	The digital banking system of CBE is much secured.					
2		The digital banking of CBE has a well-protected.					
3		I am confident on digital banking system of this bank.					
4		The digital banking is comfortable application system.					
5		I consider my banking information is secreted.					
6		I rely on CBE's information security system					
1	Speed	It is easy to find what I need on digital banking.					
2		It is easy to get anywhere on the website of online banks.					
3		I am interested in Swift transactions of CBE.					
4		I receive rapid trading responses via CBE's digital banking services.					
5		I believe my business or financial transaction are well transacted in BE.					
6		CBE is quickly addressing my transaction issues based on its digital banking services.					
1	U	There is instantaneous communications in CBE via its digital					

		banking services.					
2		I believe CBE's digital banking services are worldwide accepted system.					
3		Service Reliability are the benefits of CBE's digital banking services.					
4		CBE's digital banking services holds universally accepted operating system.					
5		CBE's digital banking services are user-friendly.					
6		CBE's digital banking services are easily available everywhere.					
1	System Availability	Due to digital banking system, I feel this bank is near to me.					
2		I can get CBE's digital banking services benefits wherever I go.					
3		Digital banking system of this bank can be certainly obtained.					
4		Digital banking system of this bank can be always achieved.					
1	Control	CBE has well organized system control mechanisms.					
2		Digital banking system of this bank can be controlled virtually.					
3		Digital banking system of this bank helps to regulate virtually.					
4		Digital banking system of this bank creates opportunities for monitoring.					
1	Customer Satisfaction	I am satisfied with overall online bank's products and services.					
2		I am generally pleased with this bank's online services.					
3		I intend to continue using the online banking.					
4		I would like to say positive things about online banking to other people.					
5		I am completely happy with CBE that is providing alternative banking services.					
6		I am satisfied with the customer support provided by CBE .					

Please comment on digital banking system of this bank

Are you satisfied with digital banking system of this bank? If yes, Why? or No, Why not?

Thank You!

Appendix II- Interview Checklist

Dear Sir/Madam,

I really appreciate for your valuable responses to the following checklists. It will not take much of your time.

Shall I proceed with my questions?

Thank you!

1. Do you think the relation between digital banking quality services and customer satisfactions?

2. Please inform us the current level of digital banking status of this bank and its role in attracting customers.

3. Do you explain the digital banking service that affects customer satisfactions in banking industry.

Thank you again!