
# ST. MARY'S UNIVERSITY

# SCHOOL OF GRADUATE STUDIES

## MBA PROGRAM

# Factors Influencing the Practice of Mobile Banking in the Case of Commercial Bank of Ethiopia, Kirkos District, Addis Ababa.

**By: Tsion Belay**

**Advisor: Taye Amogne (PhD)**

**November, 2021**

**SMU, Addis Ababa, Ethiopia**

# Factors Influencing the Practice of Mobile Banking in the Case of Commercial Bank of Ethiopia, Kirkos District, Addis Ababa.

**By: Tsion Belay**

**Advisor: Taye Amogne (PhD)**

**A Thesis Submitted to School of Graduate Studies of St. Marry University in Partial Fulfillment of the Requirements for the Degree of Master of Art in Business Administration.**

**November, 2021**

**SMU, Addis Ababa, Ethiopia**

**ST. MARY'S UNIVERSITY**

**SCHOOL OF GRADUATE STUDIES**

**MBA PROGRAM**

# Factors Influencing the Practice of Mobile Banking in the Case of Commercial Bank of Ethiopia, Kirkos District, Addis Ababa.

**By: Tsion Belay**

**Approved by Board of Examiners**

| | |
|---|---|
| _____ | _____ |
| Dean, Graduate Studies | Signature |
| _____ | _____ |
| Advisor | Signature |
| _____ | _____ |
| External Examiner | Signature |
| _____ | _____ |
| Internal Examiner | Signature |

# DECLARATION

I, hereby declare that this thesis entitled “Factors Influencing the Practice of Mobile Banking in the Case of Commercial Bank of Ethiopia, Kirkos District, Addis Ababa”, my own work and that, to the best of my knowledge, it contains no material previously published by another person or material which has been accepted for the award of any other degree by the university or any other university, except where due acknowledgment has been made in the context. I have produced it independently except for the guidance and suggestion of my Research Advisor. This study has offered for the partial fulfillment of the Degree of Master of Business Administration [General MBA] by:

**Tsion Belay** _____
Name Signature
SMU, Addis Ababa, Ethiopia Nov, 2021

## Acknowledgement

I am proud to acknowledge some of the many individuals who helped me a lot in carrying out this study.First, I would like to thank almighty God. Research in this area has begun many years in the past by several researchers. Hence, I am deeply grateful for the work of early researchers whose efforts have provided a foundation for my work. I own special debt of gratitude to my advisor Taye Amogne (PhD) for his invaluable support, comments and feedback, which has contributed a lion's share in my work.

Finally yet importantly, I would also like to thank my work colleagues in the workplace and friends for their moral support, and encouragement.

## List of Acronyms and Abbreviations

| | |
|---|---|
| **ATM** | Automatic Teller Machines |
| **CBE** | Commercial Bank of Ethiopia |
| **E-payment** | Electronic payment |
| **ICT** | Information and Communication Technologies |
| **IDT** | Innovation Diffusion Theory |
| **IT** | Information Technologies |
| **M-Banking** | Mobile Banking |
| **MIS** | Management Information System |
| **MPIN** | Mobile Banking, Personal Identification Number |
| **PDA** | Personal Digital Assistant |
| **PEOU** | perceived ease of use |
| **SMS** | Short Message Service |
| **SPSS** | Statistical Package for the Social Science |
| **TAM** | Technology Acceptance Model |
| **USSD** | Unstructured Supplementary Service Data |
| **VIF** | Variance Inflation Factor |
| **WAP** | Wireless Application Protocol |

## Tabel of Contents

## List of Tables and Figures

**Tables** **Page**



**Figures**

## *Abstract*

*The main aim of this study was assessing the factors influencing the practice of mobile banking in the case of Commercial Bank of Ethiopia, Kirkos District, Addis Ababa. A descriptive and explanatory research design is adopted using quantitative study methods. The research approach which used for this study was Quantitative in Nature. From 72,799 total population, 438 respondents were selected, to undertake the study. Descriptive analysis, correlation analysis and linear regression was used to analyze the gathered data. The result of the study indicates that there is a positive significant relationship between perceived risk, trust, convenience, relative advantage; and practice of mobile banking. There is a positive significant relationship between perceived risk, trust, convenience, relative advantage and Practice of Mobile Banking. Perceived risk, trust, convenience, and relative advantage is at (r=.304** p<0.01), (r=.300** p<0.01), (r=.316** p<0.01), and (r=.384** p<0.01) respectively. Thus, it can be concluded that there is strong relationship between the independent and the dependent variable. Linear regression analysis revealed that amount for r = 0.911 which explains a strong positive relationship between predictors and Practice of Mobile Banking. It means that the relationship between perceived risk, trust, convenience, relative advantage in Commercial Bank of Ethiopia is very strong, and by increasing the quality of one the other one will increase as well. The $R^2$ result are safe to say that Practice of Mobile Banking is about 86.2 % dependent over trust, convenience, relative advantage. Therefore, the conclusion of this study is that practice of mobile banking meet the expectations of the trust, convenience, relative advantage. Thus, this research has provided valuable knowledge and information to banks, service developers, and software engineers to enhance consumers' intention to practice mobile banking services in future. Finally, the researcher has recommended that Commercial banks, financial institutions and the providers of digital financial services should create awareness of the benefits of mobile banking services that include: financial inclusion, easy access to mobile banking services and convenience in performing transactions.*

***Key words: Perceived Risk, Trust, Convenience, Relative Advantage, and Practice of Mobile Banking.***

# Chapter One: Introduction

## 1.1. Background of the Study

In modern economy, a strong and powerful financial system is a pillar of economic growth and development. The availability of banking facilities and unfolding banking service outreach are the major facilitators of developmental and expansionary activities (Sumanjeet, 2010). In this regard, information technology plays a key role in promoting inclusive financial system as it is the only way to reduce the cost significantly and reach the masses. But all technologies are not suitable for financial inclusion due to affordability, accessibility, security and privacy. In the last decades, mobile phone technology has emerged as the most potential and well suited channel for financial inclusion and use of mobile phone for inclusive finance is very popular in countries where most of the population is unbanked or under-banked (Sumanjeet, 2010).

AL-Akhras et al., (2010), defines m-banking as an application that has resulted from the widespread use of computer technologies that are shaping all aspects of everyday life. It is as a result of organizations that are connected to the internet deciding to offer exceptional customer service. It describes the banking services that the user can perform via a mobile device ubiquitously at anytime and from anywhere. In order for users to access their accounts, they need a mobile device and network connectivity.

Today customers' interactions with their banks are done through multiple touch points like branches, ATMs, telephone banking, internet banking and m-banking. These provide efficient ways of selling products and offering services to their clients (Hoehle, H., & Huff, 2012). Digitalization of the banking sector has revolutionized how financial transactions are performed leading to the customer's experience being enhanced by making banking easy, quick, convenient and cheaper (Carlos Tam, 2015).

The use of mobile banking can make basic financial services more accessible to low-income people, minimizing time and distance to the nearest retail bank branches (CGAP 2006). The outstanding growth of mobile sector worldwide has created a unique opportunity to provide social and financial services over the mobile network. With over 4 billion mobile cellular subscriptions worldwide, mobile network has the ability to immediately offer mobile banking to 61% of the world population (Sultana, 2009). But still the usage of mobile banking is a debatable issue among the educated persons and professional body because of the risk involved in such transactions.

The general objective of this study was to look at factors influencing the practice of mobile banking in commercial banks of Ethiopia. The main factors that would be discussed are: mobile banking services and perceived risk, trust, convenience, and relative advantage technology, usability, security, and cost. Technology were include interface design (Luarn & Lin, 2005). Usability was to include the use of applications, and drill down facilitation that may be deterrents to local users (Pedersen et al., 2002). Security was to cover the perceived risk (Mohamed K. & Kathy, 2008). Lastly, cost will include phone cost, and cost of transacting (charged by the bank and by the mobile service provider).

Commercial banks Ethiopia have faced challenges in managing customers' expectations when it comes to service provision. The long queues specially for the local large commercial banks, difficulty in the customer, accessing information on their accounts both for information purpose and for simple transactions has seen most commercial banks adopt mobile banking. Commercial Banks of Ethiopia also wish to tap to the unbanked population and are using this tool to reach out to customers who are have a hard time accessing their branch network. Banks have faced some challenges in trying to adopt this new technology including and not limited to high cost of IT system acquisition, mobile platform systems compatibility with core banking system, customer awareness on features available with the new service is also a challenge. Security and ease of use of the technology has been some of the issues some banks have raised.

Presently, of all of the styles of mobile banking offerings, most customers of the financial institution use notification or alarm inquiry (NBE, 2020), in there are over 45 million cellular subscribers in Ethiopia in which there is 22.7 million internet customers, up from 15.7 million four years ago, whilst clever Smartphone ownership doubled to more than 12 million, according to the NBE 2020 This implies that, although large quantity of populations have a cellphone, they are now not subscribed for mobile banking provider because of different factors, which the studies is interested to find out. In order to in addition beautify mobile banking exercise in developing countries, a higher expertise of the challenges and drivers impacting M-banking adoption is important (Lifen Zhao et al., 2010). By gaining an in-intensity expertise of the demanding situations and conditions that affect developing capacity to completely adopt cellular banking and recognize its advantages, strategic implications may be generated by way of researchers and practitioners regarding the way to sell this provider in the growing international locations. However, no matter the significance of the examine location in growing countries, restrained research have been conducted to date particularly in Ethiopia. Consequently, extra studies are nonetheless required to find out the basis purpose that impedes the

practice of cell banking inside the massive country owned industrial bank of Ethiopia which took the better marketplace proportion inside the Ethiopian banking industry. Therefore, to address the current gap in the literature; this look at is designed to evaluate the exercise of mobile banking and its challenges in business financial institution of Ethiopian.

## 1.2. Statement of the Problem

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

In Ethiopian there was a limitation of researches, which are conducted in mobile banking particularly in Commercial Bank of Ethiopia. Although, some prior researchers like: (Kalkidan, 2016; Hayat, 2017) have tried to make research on mobile banking but their study was too general as it has been made in the Ethiopian banking industry, which is not able to show the root cause that affect customer of CBE not to use mobile banking service as desired. In addition, throughout the researcher's experience as a Customer Service Manager at CBE grade four branch, a significant number of customers who use mobile banking have always been noticed coming to the bank to use bank services.

The Commercial Bank of Ethiopia is making an investment into the mobile banking project for effective provision of mobile banking service to its customers. Hence, it is important for commercial banks that provide mobile banking service to understand the challenges impeding the intention to use mobile banking service, in order to obtain the desired end result of the project thereby create cash less society, which is the ultimate objective of financial sectors in the current digital world. Moreover, a clear understanding of these factors was enabled the Commercial Bank of Ethiopia to develop suitable marketing strategies, tailored awareness creation programs and pilot projects.

The study was beneficial for it would identify the problems related to delivering of E-banking service, which would be useful to banks to fine tune their operation. It would be useful to policy makers (NBE) to device strategies that would enhance use of ICT in banking business. Besides to researcher

knowledge, there is very little information availed on this issue by previous attempts. Hence this research is undertaken to fill the knowledge gap.

This study has been conducted with the main objective of identifying the factors that influence the usages of mobile banking in Commercial Bank of Ethiopia. There are some findings in this study which are similar to the findings of the earlier studies related to the mobile banking while other findings are different. For example, a positive relationship has been revealed between the usage of Mobile Banking and Trust as in this research as it was found in the study of (Bhattacherjee, 2002). Again in his study Lee & Chung, (2009) discovered significant relation between usages of mobile banking and Time Risk, Social Risk and Financial Risk whereas no relationship has been found between Security Risk and usage of Mobile Banking. On the contrary, this paper explored the negative relationship between Time Risk, Security Risk and Financial Risk while Social Risk has no significant relationship with the usage of Mobile Banking.

## 1.3. Research Question

- What are the four components of perceived risk that affects the practice of mobile banking?
- What influences the users to trust mobile banking?
- How does the user in Commercial Bank of Ethiopia perceive risk with regards to mobile banking?
- What is the perception of mobile banking users in Commercial Bank of Ethiopia about the convenience in using mobile banking?
- What relative advantages do the mobile banking users enjoy?

## 1.4. Research Objective

### 1.4.1. General Objective

The general objective of this study is to assess factors influencing the practice of mobile banking in the case of Commercial Bank of Ethiopia, Kirkos District, Addis Ababa.

### 1.4.2. Specific Objective

This research has the following specific objectives to achieve its general objective.

- To assess the effect of four components of perceived risk (performance risk, security/privacy risk, time risk, and financial risk) with regards to the practice of mobile banking in Commercial Bank of Ethiopia.

- To evaluate the role of ability, integrity and kindness in building trust to practice mobile banking
- To examine whether convenience (perceived usefulness & perceives ease of use) of using any role to play in adoption of mobile banking in Commercial Bank of Ethiopia.
- To explore the role of relative advantages (in terms of cost and time) in choosing mobile banking in Commercial Bank of Ethiopia.

## 1.5. Scope and Limitation of the study

Although, there are fifteen Districts in Commercial Banks of Ethiopia that are providing mobile banking service, the study focused on Kirkos districts of Addis Ababa, which comparatively found to have the large portion of mobile banking customers (CBE, 2018). Therefore, the study focused on assessing factors influencing the practice of mobile banking in CBE grade four branches only. This is mainly due to the fact that grade four branches relatively have large number of mobile banking customers, which are stayed for long period. In addition, the time and financial constraints forced the study to be limited to these areas as traveling across districts requires sufficient time and cost. Since, Kirkos districts of Addis Ababa has similar working procedures, rules and regulations with other districts in the bank, focusing on grade 4 branches of the district would have no compromise on the study result. As a result, the study result would represent not only Kirkos districts of Addis Ababa but also other districts of the bank.

Another point to take into consideration was be methodologically speaking; the present research would apply explanatory descriptive research: to examine factors influencing the practice of mobile banking among customers of Commercial Bank of Ethiopia, Kirkos District, Addis Ababa. Moreover, it assesses whether the practice of M-Banking is a constraint on the basis of different demographic characteristics, such as age, gender, years of schooling of the respondents, and years you have used the mobile banking in Addis Ababa. No doubt a better understanding may be gained concerning the strength of association between the variables if a more rigorous statistical analysis had been used, for example, using structural equation modeling.

## 1.6. Significance of the study

The study aimed to increase understanding of existing stocks of information relevant to mobile banking. By understanding the major factors that hinder the utilization of mobile banking, the results would to help the bank managers to prioritize their mobile banking initiates and allocate adequate resources effectively and consequently improve their mobile banking solutions.

Users of mobile handsets was gaining a better understanding of the challenges the banks have to undergo through in implementation of mobile banking. In addition, the public who are the customers were to have the opportunity of enjoying better services at low costs, convenience and high security.

Besides, this study would be a step-stone to the world of academia; researchers for further studies, in the field of factors influencing the practice of mobile banking in the case of Commercial Bank of Ethiopia. Adding this study would enrich the existing shortage of literatures hence giving a better understanding on the mobile banking in the banking sector.

## 1.7. Organization of the paper

The paper would be organized into five chapters: Chapter one describes background to the study, statement of the problem, research objectives, scope and limitation of the study, the significance of study and organization of the thesis. Chapter two would be containing a review of the literature on factors influencing the practice of mobile banking in the case of Commercial Bank of Ethiopia. Chapter three describes the methodology of the research that clearly indicates the way the researcher conducts the study. Chapter four of this study would illustrate the result and discussion of the research findings whereas chapter five of this study would come up with summary, conclusion and recommendation.

# Chapter Two: Literature Review

## 2.1. Theoretical Literature Review

The theoretical part of the literature covered the topics concept and definition of multimodal and freight transport related experience on rail and the multimodal operator performance.

### 2.1.1. The Concept of Mobile Banking

Most, if not all, commercial banks in Ethiopia have adopted mobile banking technologies to help them improve income streams and channels via which they can generate money. However, because penetration of this service has been slower than expected, the study would focus on the impact of this technological innovation in Ethiopian commercial banks and evaluate the customer experience. The three theories we would present may help to explain why mobile usage is minimal, despite the large capital outlay banks have made to provide these services.

Mobile banking is a type of mobile commerce that allows clients to use their mobile devices to access their bank accounts and conduct and complete banking operations like balancing checks, checking account statuses, transferring money, and selling stocks (Kim et al., 2009). Mobile banking, according to Luo et al., (2010), is a new approach for receiving financial services via a channel in which a consumer interacts with a bank via a mobile phone.

In Jordan, Asfour & Haddad (2014) conducted a similar study. The findings revealed that the overall dimension of mobile banking has a statistically significant impact on consumer satisfaction. In comparison to other dimensions, privacy and accessibility have a greater impact. A similar study was conducted in Pakistan to evaluate the link between customer happiness and mobile banking uptake. The findings show that consumers are more likely to use a service if they believe it is secure, dependable, and timely(Saleem, Z., & Rashid, 2011).

Mobile phones have become a tool for everyday use, which creates an opportunity for the evolution of banking services to reach the previously unbanked population through mobile banking. The use of mobile banking can make basic financial services more accessible to low-income people, minimizing time and distance to the nearest retail bank branches.

Mobile Banking allows users to accomplish tasks such as reviewing account history, receiving SMS notifications, accessing card statements, checking balances, and recharging their phones using their mobile phones (Vinayagamoorthy, A. and Sankar, 2012). Banks are continually improving their

technologies in order to reach out to each and every consumer and expand their customer base. There are numerous advantages to adopting mobile banking, including the fact that persons in rural or isolated places may easily access mobile banking whenever they need it.

Mobile banking is a new mobile technology that combines information technology with commercial applications. Consumers have been able to utilize mobile banking to access unique services 24 hours a day, without having to visit a typical bank office for personal transactions, since it was established.

### 2.1.2. Mobile Banking in Ethiopian Banking Industry

The electronic banking service was ushered into the Ethiopian market in 2001 when the largest state owned, Commercial Bank of Ethiopia (CBE) introduced ATM to deliver service to the local users (Gardachew, 2010). After this the electronic banking service scope was further expanded to mobile banking when Dashen Bank signed an agreement with iVery, a South African E-payment technology company, for the introduction of mobile commerce in April 21, 2009. According to the agreement, iVery Payment Technologies has licensed its Gateway and MI Card E-payment processing solution to Dashen Bank. Dashen's Mod birr users can transfer 500 birr to other Mod birr users in 24 hours a day. This would make Dashen Bank the first private bank in Ethiopia to acquire E-commerce and mobile merchant transactions (Amanyehun, 2011).

However, mobile banking came into full practice after several years of trials and errors as well as wait-and-see attitude by customers. Since then, mobile banking has shown a gradual growth across many various parts of Ethiopia. Despite the very high mobile penetration rate, the use and adoption of mobile banking services remains low. With the advent of new mobile technologies, such as Blackberry, iphone, Androids, etc., which serves as a catalyst, mobile banking is on the edge to draw millions of new users within the world teeming population (Agwu, 2013). Many customers who are tired of the old banking systems are looking for time saving alternatives. The review of the existing literature showed that mobile banking has been widely researched in the developed and emerging economies; however, there is no research for the developing Ethiopian economy. This research is therefore believed to fill this gap.

### 2.1.3. Mobile Banking Models

There are two main business models to consider when implementing a mobile banking system, the bank-led model; and the non-bank model. It is important to note that the two types of business models listed above can be implemented using a variety of service providers, regulatory agents, and

facilitators. How a particular model is implemented greatly depends on how a country wants to establish a mobile banking system and the volume and coverage a particular bank wishes to have (Chemonics International, 2010).

The bank-led model at its most basic form, is as an extension of conventional branch-based banking. Like conventional banking practices, when a bank-led, mobile banking model is adopted, the customer account relationship rests with the bank. This relationship can vary, depending on what type of arrangement has been predetermined between the bank(s), retail agents, and other partners. In addition, the bank-led model offers consumers access to the same core financial functions, including the ability to check account balances, make deposits, process transactions, and the opportunity to extend credit. This model differs from conventional branch-based banking in the sense that consumers are no longer forced to access bank services or facilitate financial transactions at a bank branch. Instead, consumers are provided with an opportunity to remotely conduct financial transactions using a whole range of agents or mobile technologies. Moreover, if a bank chooses to adopt a bank-led, mobile banking model, it can utilize these alternative delivery channels to flexibly and inexpensively increase its outreach without having to build new bank branches or hire more employees (Ivatury G. & Mas I., 2008).

The non-bank-led mobile banking model does not vary significantly from the bank-led model. In this model, however, a bank does not actively participate in the mobile banking sector, except possibly as a regulator. Instead, non-banks, such as telecommunication service providers, retailers, and other third-party agents, promote and provide mobile banking services to customers (Chemonics international, 2010).

### 2.1.4. Services Available on Mobile Banking

Mobile Banking, as defined above, includes a wide range of services. According to Tiwari & Buse, (2007) these services may be categorized as follows:

#### 2.1.4.1. Mobile Accounting

Tiwari & Buse, (2007) defined mobile accounting as transaction-based banking services that revolve around a standard bank account and are conducted and/or availed by mobile devices.

Not all mobile accounting services are however necessarily transaction based. Mobile accounting services may be divided into two categories to differentiate between services that are essential to operate an account and services that are essential to administer an account (Renju, 2014). Moreover,

additional services are required that inform a customer about his/her transactions and other activities involving their account. It is for this reason that Mobile Accounting is offered almost regularly in combination with services from the field of Mobile Financial Information.

#### 2.1.4.2. Account Operation

The term Account Operation, as used in this study, refers to an activity that involves monetary transactions. Such transactions may involve an external account and/or internal account. According to (Tiwari & Buse, 2007), Mobile services that are used to operate an account are:

**Money remittances:-** Mobile devices may be used to instruct the bank to remit money in order to conduct one-time transactions, such as paying bills or transferring funds. This service can also include the facility to cancel an ordered remittance.

**Issue standing orders:-** The house bank may be entrusted with standing orders for payment of regularly recurring payments such as payment of standing payments, monthly rent or telephone bill.

**Transfer funds to and from sub-accounts:-** Funds from one sub-account may be transferred to another as and when needed, for instance from a savings account to checking or other types of account and vice versa (Sunil, K. and Durga, 2013).

**Subscribing insurance policies:-** Standardized, low-cost insurance policies like travel insurance policy may be purchased via mobile devices. This service could be particularly attractive in time-critical situations, for instance, if a bank customer has to set out on an urgent, unplanned journey, he may still be able to subscribe to a travel insurance policy offered by his house bank.

#### 2.1.4.3. Account Administration

The term Account Administration refers to tactical situations, for instance, if a bank customer has to set out on an urgent, unplanned journey, he may still be able to subscribe to a travel insurance policy offered by his house bank. This may involve activities like access administration and cheque book request. Mobile Accounting services that are used to administer the account are (Sunil, K. and Durga, 2013; Tiwari & Buse, 2007):

**Access Administration:-** Mobile devices may be used to administer the access to an account, for example to change the individual PIN or to request new transaction numbers.

**Change Operative Accounts**:- Through this service a customer can change his default operative account and do transactions using a different account. This option is attractive for customers holding

several sub accounts. Funds of sub-accounts may be hereby utilized in a targeted manner without first transferring the amount to the default account.

**Blocking Lost Cards:-** Mobile non-voice telecommunication systems such as Wireless Application Protocol, Short Message Service (WAP, SMS) can be used round the clock to speedily block lost credit and debit cards irrespective of the current geographic location.

**Cheque Book Request:-** Instead of going personally to the bank, the customer can request for a cheque book to be mailed to his or her address as per the records of the bank. This saves his/ her valuable time (Sunil, K. and Durga, 2013).

**Bill Payment: -** for those companies which register with the bank for this service, the payment is made on request on mobile phone banking.

**Change of Primary Account: -** the customer has the option to change the primary account to another new account number for carrying out transactions (Sunil, K. and Durga, 2013).

#### 2.1.4.4. Mobile Financial Information

Mobile Financial information refers to non-transaction based banking- and financial services of informational nature (Tiwari & Buse, 2007). This sub-application may be divided into two categories: Account information and Market information (Cruz et al., 2010).

#### 2.1.4.5. Account Information

The term Account Information refers to information that is specific to a customer and his bank, even though it does not necessarily involve a monetary transaction. Mobile services that belong to this category are:

**Balance inquiries:-** mobile devices may be employed to check the current financial status of own bank or securities accounts (Sunil, K. and Durga, 2013).

**List of latest transactions:-** mobile devices may be used to request a list of the latest transactions performed on an account. This service works with a standard, pre-specified number of latest transactions that are reported, as and when demanded. Most of the banks provide a list of transactions.

**Statement request:-** unlike the request for a list of latest transactions, it generates a list of all transactions in a given period, for instance in a week or in a month. Statements may be requested either manually, as and when needed electronically. With Mobile Banking the account statements can be requested via and/or delivered on mobile devices (Cruz et al., 2010).

**Transaction and balances:-** the bank may be instructed to automatically alert the customer via SMS whenever transactions (credits as well as debits) exceeding a certain amount are performed on the account. In addition, a similar threshold alert may be activated for the balance status of the account. The customer may be informed via SMS whenever the balance falls below a certain predefined level. This service may be useful to help the customer avoid unpleasant situations by not being able to honor his commitments (Cruz et al., 2010).

**Threshold alerts for stock prices:-** the bank may be instructed to send an alert on mobile devices, via SMS, when prices of some particular stocks fall or jump to a predefined threshold value and ask for further instructions (Suoranta & Mattila, 2004).

**Returned cheques or cheque status:-** the customer may be informed without time delay if one of her or his deposited cheques has not been honored and corrective steps are required.

**Credit card information:-** the customer may check anytime and anywhere the current status of his credit cards and the amount that he may utilize at that given point of time.

**Branch and ATM locations:-** mobile devices may help finding the nearest branch or ATM affiliated with a bank. The current location of the customer may be determined by positioning the mobile device. This service may be particularly useful while travelling (Crossman & Crossman, 2011).

**Helpline and emergency contact:-** mobile devices may be provided with content that is required in emergency situations, for instance to block a lost credit card and cheque book. The information may be either embedded in the telephone menu, for example in cooperation with a network carrier or the information may be provided on a WAP page analogue to a web page.

**Information on the completion statutes of an order:-** the bank may use "push" services to inform the customer via his mobile device regarding whether or not his orders could be carried out. This ensures that urgent information can be provided to the customer while on the move.

**Product information and offers:-** the bank can provide information about its products and new offers to a customer on the move. A customer can "pull" the information that he wishes to access. On the other hand, the bank can "push" the information or offers that the customer has identified as interesting and is willing to receive.

#### 2.1.4.6. Market Information

The term Market Information as opposed to Account Information refers to information with a macro scope. This information is not directly related to the customer account. It is generated either externally like exchange rates or central bank's interest rates, or internally by the individual bank (Tiwari & Buse, 2007), for example bank-specific interest rates. The individual bank customer does not play a direct role in this process. The information may be later sorted out to cater the individual needs and preferences of a particular customer, if so desired by him, and subsequently delivered to a mobile device of his choice, or a PDA. Information in this category generally concerns: Foreign exchange rates, interest rates, Stock market news and reports and Commodity prices (For example: - Gold and raw materials).

### 2.1.5. Technologies Employed to Provide Mobile Banking Services

Customers can use mobile banking technologies for various banking services ranging from planning to pay their bills via their cell phones. Mobile technologies used in the mobile banking include the browser-based applications, messaging-based applications and client-based applications (Kim et al., 2009; Tiwari & Buse, 2007).

#### 2.1.5.1. SMS (Short Message Service)

On the messaging-based applications, the communication between the bank and the customer is carried out via text messages. For example, by using a registered mobile number, the customer sends a predefined command to the bank, and then uses text messages to conduct transactions with the bank. An example of messaging-based applications is the Unstructured Supplementary Service Data (USSD), which has compatibility with most mobile phones.

The term "SMS Banking" refers to the provision of banking and financial services via means of text messaging service, known as SMS. SMS allows the financial institutions to communicate with their customers. Almost all mobile phones have the ability to use SMS; SMS is so suitable for sending messages from banks for a number of banking operations. In order to create a query, the customer sends an SMS containing the service request to a special number which is considered for this purpose.

The customer sends a customized SMS (a command based instructed with Arabic number) to the bank with the predefined commands for each offered service. The server of the bank receives the SMS, interprets the commands and executes commands and instructions, if the request is found to be authorized. The authentication is carried out with the help of a special Mobile Banking, Personal

Identification Number (MPIN). Furthermore, the requests are only accepted from a mobile phone number that has been registered as the authorized number of operating that particular bank account. With the integration made with the mobile banking server one can get all the financial and non-financial information. After completion of the whole process, the information will be gathered in the oracle database for future reference.

#### 2.1.5.2. Browser-Based

The browser-based application is essentially a Wireless Access Protocol (WAP)-based internet access (Kim et al., 2009). This requires a compatible mobile phone which is WAP-enabled. The mobile phone is used to access banking portals through the Internet. Brower-based customer needs to be connected to the internet to use this service. The interface is generated from the server which is transported to mobile device, and this allows the content to be displayed through the browser. This method is extremely fast depending on the server that the customer is connected to but one its disadvantages is that, it requires the subscriber (customer) to stay online all through the transaction process and could lead to higher cost for the customers.

#### 2.1.5.3. Client-Based (Downloadable Applications)

This method requires the customers to use software installation, and this will serve as a user interface that can allow customers to use the mobile device while offline to access some basic transactions before going online.

Typing details before connecting to the internet could reduce cost. This client based application is particularly useful because it allows customers to stay offline and while preparing transaction such as entry of account details and afterwards the transmission is made by sending out the data, this banking process conducted offline reduces online connection time and cost (Pendharkar, 2004).

These are mobile banking applications that the users should download on their phone. Using the properties of these applications, transactions can be encrypted completely in both source and destination. Since this software has been designed for special purposes, mobile banking application designers can optimize the applied interface for the financial transactions.

The independence of application is one of the advantages of these applications for financial institutions (Ming, 2007). Once customers have downloaded the software on their phone, they can use the Mobile Banking application. In other words, the application should be compatible with the various needs and functions for a large number of mobile phones and this is expensive.

The phone should also support one of the environments such as the Microsoft Windows Mobile.

Another problem of mobile banking application is that the customers should download the software, install it on their devices, and update its new versions, and maybe this is a new problem for some of the customers.

### 2.1.6. Factors Affecting the Mobile Banking Utilization

Some of the factors that affect the optimal adoption of mobile banking services include: technology, usability, security, and cost.

#### 2.1.6.1. Technology

The different mobile devices available in the local market should have hardware architecture and operating systems that can support the banking applications. The current systems have their failings while supporting different applications and interfacing on different communication networks (Luarn & Lin, 2005). Further, data transmission needs to be compressed to save on costs.

#### 2.1.6.2. Usability

Various studies have examined the aspect of resistance of users to accept innovations and changes, and identified factors impeding the acceptance of mobile technology ( Venkatesh, 1999; Compeau, Higgins & Huff, 1999; Ellen, P. S., Bearden, W. O., & Sharma, 1991; Ram & Sheth, 1989).

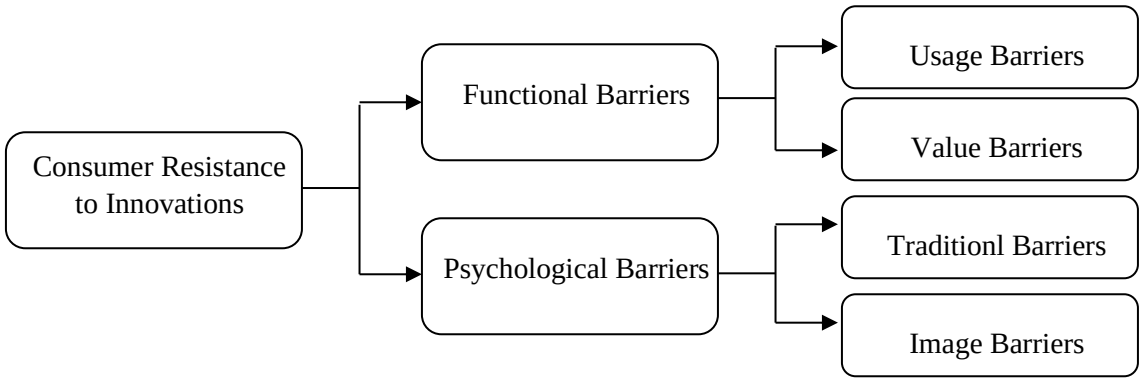


**Figure 2.1: Consumer Resistance to Innovations (Ram & Sheth, 1989)**

A major limitation to usability of mobile devices has been the inconvenience in inputting data. The latest generation of devices have been resolved these limitations by the introduction of touch screen technology. Banking applications need to address this issue to provide the consumers ease of use. Applications need to have the facility of continuing usage even after disruption of mobile

communications without compromising on security. Potential to use applications offline would enhance their usability. The applications must lead them to ease of usability by providing shortcuts to frequently used transactions. The users must not have to resort to lengthy inputting to access data (Srite, M., & Karahanna, 2006).

#### 2.1.6.3. Security

Security risk has two main elements. First, perceived risk grounded in concerns with regard for the technical performance or functional reliability of the service delivery system. Second, perceived security risk may be associated with concerns about personal security and privacy (Mohamed K. & Kathy, 2008). Technology use is predicated on the perception that the service delivery system will perform to the satisfaction of the user in terms of functioning reliably and providing the requisite personal assurance.

In the purchase decision-making processes, consumers mainly consider security risk associated with the acquisition of a service or product. Generally, consumers attach more risk to intangibles as compared to physical goods. Experience and use diminish the perceived risk associated with utilization of a new product or service. Thus, the history of consumers' usage of mobile communications services is taken to be a useful criterion for segmenting a market by innovativeness categories (Munnukka, 2005).

In summary, these finding suggests that mobile phone banking must be secure. For instance, when one loses the handset, loss of service must have limited impact where the service could support a remote locking feature embedded in the software that prevents a lost phone from accessing the customer's account. Data integrity against unauthorized modification must be provided. In addition, data transmission must be secure and application and data access must be controlled. Therefore security or lack thereof must be addressed in order to encourage the utilization of mobile banking.

#### 2.1.6.4. Cost

Price is an important factor that influences the utilization of the technology. In times of increased competition, a distribution channel must organize business processes efficiently so as to reduce distribution costs. In Mobile Banking there are three costs:- a) normal costs associated with mobile phone providers' activities, b) the bank cost and charges and c)the cellular phone cost. The cost of mobile devices though a one-off cost, makes mobile banking as costly as other forms of banking. If

the cost of mobile devices is very high, this discourages account holders from acquiring them hence impending the utilization of mobile banking services (Chavidi, N., & Mulabagula, 2004).

Price is perceived to be the most important consequence of m-commerce utilization compared to convenience, security, privacy and efficiency. As a result, mobile banking providers need to pay particular attention to their pricing strategy with the objective to uneven the potential factors that encourage or discourage its utilization. Affordability in mobile banking varies by number, size and type of transactions (Mohamed K. & Kathy, 2008).

A major utilization obstacle is the high charges levied by the mobile service providers. It would be possible for the regulators to set maximum prices for quota volumes of SMS and other mobile messaging systems which are dedicated to mobile banking systems (Reijswoud, 2007). As these new low-cost (or even zero-cost) mobile banking services emerge, a way for the existing players to keep them out of the game will be to make inter-bank ICT systems unaffordable and/or too complex to be participated in. Regulators can have a role in controlling or eliminating that tendency by setting maximum charges and on insisting on simple but secure interoperability standards (Delgado, H. & Nieto, 2004). In the Kenyan scenario though there is no charge for depositing funds, but a sliding tariff is levied on withdrawals (Omwansa, 2009).

### 2.1.7. Challenges of Mobile Banking System in Ethiopia

According to Gardachew, (2010) Ethiopian banking industry faces numerous challenges to adopt E-banking system and grab the opportunities presented by ICT applications in general.

These challenges are M-Banking agents, technology, awareness, trust, risks, environment (organization), educational level, government directives etc. Additionally, perceived risk is also the big problem. Perceived risk refers to the user's level of uncertainty (Lee & Chung, 2009) regarding the outcome of acceptance decision. The researcher identified five risks that can be described for M-banking, as follows;

**Performance risk:** refers to losses incurred by deficiencies or malfunctions of M-Banking servers. Low level of internet penetration and poorly developed telecommunication infrastructure: - Lack of infrastructure for telecommunications, Internet and online payments impede smooth development and improvements in e-commerce in Ethiopia. Most rural areas of the country, where the majority of small and medium businesses are concentrated, have no Internet facilities and thus are unable to engage in e-commerce activities.

**Security risk:** is defined as a potential loss due to fraud / a hacker compromising the security of MB user. Lack of suitable legal and regulatory framework for e-commerce and e-payment:-Ethiopian current laws do not accommodate electronic contracts and signatures. Ethiopia has not yet enacted legislation that deals with e-commerce concerns including enforceability of the validity of electronic contracts, digital signatures and intellectual copyright and restrict the use of encryption technologies.

**Time/convenience risk:** this refers to a loss of time and any inconvenience incurred due to the delays of receiving payments or the difficulty of navigation.

**Social risk:** refers to the possibility that using M-Banking may result in disapproval by one's friends, family, work group, etc.

**Financial risk:** it is defined as the potential for monetary loss due to transaction errors or account misuse.

***Some Other Key Challenges for E-banking applications are:***

**Political instabilities in neighboring countries: -** Political and economic instabilities in Somalia, Southern Sudan, and Eritrea are threatening traits that do not provide a very conducive environment for e-banking in Ethiopia. Political instabilities inevitably disturb smooth operations of business and free flow of goods and services

**High cost of Internet: -** The cost of Internet access relative to per capita income is a critical factor. Compared to the developed countries, there are higher costs of entry into the e-commerce market in Ethiopia. These include high start-up investment costs, high costs of computers and telecommunication and licensing requirements.

**Absence of financial institutions networks that links different banks (Banks are not yet automated: -** Most of the banking-transactions currently taking place use credit and debit cards supplied by Visa and MasterCard. For conducting e-banking, the use of credit or debit cards is mandatory thus requiring the need for specialized systems which are not currently available.

**Frequent power interruption: -** Lack of reliable power supply is a key challenge for smoothly running E-banking in Ethiopia.

## 2.2. Empirical Literature Review

Tam, C. & Oliveria, (2017) argued that, by enhancing the quality of m-banking more users would be retained, potential adopters of m-banking would be attracted, with the consequence of enhancing

individual performance, in turn. The findings were that the importance of use and individual performance has long been recognized by academics and practitioners in a variety of disciplines.

Some related studies are conducted by different researchers in different parts of the world. Gardachew, (2010) conducted research on the opportunities and challenges of E-banking in Ethiopia. The aim of his study was focused on analyzing the status of electronic banking in Ethiopia and investigates the main challenges and opportunities of implementing E-banking system. The author conducted a survey on the existing operating style of banks and identifies some challenges of using E-banking system, such as, lack of suitable legal and regulatory frame works for E-commerce and E-payments, political instability in neighboring countries, high rates of illiteracy and absence of financial networks that links different banks. According to Gardachew, (2010), Opportunities offered by ICT through e-learning programs and Commitment of the governments on development of ICT infrastructures is considered as drivers of using E-commerce and E-payment systems.

Mobile banking is an application of m-commerce which enables customers to access bank accounts through mobile devices to conduct and complete bank-related transactions such as balancing cheques, checking account statuses, transferring money and selling stocks (Kim et al., 2009). Luo et al., (2010), defined mobile banking as an innovative method for accessing banking services via a channel whereby the customer interacts with a bank using a mobile device.

In earlier studies in this regard have provided different results as Wu & Wang, (2005), in a study on middle class populations, found that cost had minimal significant impact on the adoption of mobile banking while perceived risk, compatibility and perceived usefulness have significant influences. On the other hand, Karnani, (2011) argues that cost plays important role in choosing mobile banking.

Mattila et al., (2003) identified that the most important attribute in encouraging the use of mobile banking was related to the costs of conducting banking (mean 4.38, standard deviation 2.15). Wish of faster data transmission accounted to the secondly highest importance mean (mean 3.74, standard deviation 2.49). Surprisingly, the third attribute mentioned to boost to mobile banking adoption was authentication with mobile phone to Internet bank (mean 3.67, standard deviation 2.60). Admittedly, the response pattern along different attributes was pretty homogenous. The distinctly most important reason for the trial of mobile banking was the possibility to conduct banking truly regardless of time and place (mean 5.09, standard deviation 1.62).

Cheah et al., (2011) argue that Factors such as perceived usefulness (PU), perceived ease of use (PEOU), relative advantages (RA) and personal innovativeness (PI) were found positively related with the intention to adopt mobile banking services. However, social norms (SN) were the only factor found insignificant.

A study was conducted by Onyebuchi, B., et al., (2016) on mobile banking adoption and challenges in Nigeria with an analytical focus on Enugu state. The study revealed that the level of adoption was still low among the middle-aged correspondents compared to the aged even though m-banking is a growing trend in Enugu. Among the recommendations offered were: a cashless policy should be vigorously pursued that would encourage the use of m-banking, a massive awareness programme to publicize the purpose and benefits derivable from the use of mobile banking; and network failure should be checked regularly. According to the study, this would boost the level of adoption of mobile banking services because of the convenience and accessibility offered by this banking platform.

Dineshwar & Steven, (2013), the researchers investigated the complex factors that prevent customers from adopting and using mobile banking services in Mauritius. The researchers used a quantitative approach, they also combined the TAM and IDT together with perceived risk and cost construct to investigate perception of mobile banking in Mauritius. The study revealed that age, gender and salary had no influence on adoption but rather, Convenience, compatibility and banking needs influenced banking adoption. On the other hand, Perceived security risk and reliability were found to be the only obstacles to mobile banking usage but also that mobile banking usage is not associated with age, gender and salary.

Mohammad Rokibul Kabir (2013) the researchers investigated on the factors that influence the use of mobile banking in Bangladesh. The approach for this study was quantitative. During the course of the research a self-administrated questionnaire was given to the clients of two full- fledged mobile banking service providers of Bangladesh called Brac Bank Limited and Dutch Bangla Bank Limited. 100 questionnaires were distributed but only 64 useable questionnaires were returned giving a response rate of 64 percent. The data was analyzed using multiple regressions and the outcome of the research was that, Variables such as ability, integrity, benevolence, perceived usefulness, perceived ease of use relative cost and time advantages were found to influence the adoption of mobile banking.

Chitungo, S. K., & Munongo, S. (2013) Zimbabwe, the study was about an analysis of the factors that influence mobile banking adoption in the rural Zimbabwe through extending the technology acceptance model. The researcher adopted use of stratified random sampling and the results of the

study suggested that factors such as perceived usefulness, PEOU, relative advantage, personal innovativeness and social norms influenced the intention to accept and use mobile banking.

Muñoz-Leiva et al., (2017) conducted a study aimed at filling in the gap that exists on the factors that influence the acceptance of mobile banking applications from a comprehension point of view that includes the theory of trust, risk and social image. The main determinants of user behavior were tested against variables such as how user friendly, social image, intention to adopt the technology, trust and many others. The findings were that PEU has a positive effect on the usefulness of the proposed application, attitude toward intention to use a mobile application has a positive effect as well and that there was no significance relationship between usefulness or risk and intention to use. The implications of these results are that communication campaigns aimed at increasing trust, mitigating risk and uncertainty among potential users can use the results in order to communicate effectively with target markets.

Soneka & Phiri, (2019) the objective of the study was to assess the factors that influence the level of e-tax systems adoption in Zambia based on TAM Model. The focus of the study was Tax Online system used by domestic taxes division in rural Zambia. The sample size of 100 respondents was purposively selected from various taxpayers who were coming through Zambia Revenue Authority Internet bureau. The data collected from semi structured survey questionnaires was analysed using descriptive statistics. The findings were that, the E-tax system is useful, easy to use and secure.

Since much of literatures are not found related to mobile banking in Ethiopia, this paper is an endeavor to mitigate the research gap in this regard. Thus on the basis of the above literatures the paper aims at identifying the factors influencing the usage of Mobile Banking in Ethiopia.

## 2.3. Literature gap

There have been a number of valuable studies in the area of mobile banking over the years back in North America, Europe, Asia and some from African countries such as Kenya, Ghana, Nigeria and Zimbabwe. Researcher's such as (Gerrard 2003), (Laforet, S.& Li, 2025), (Masinge 2010), (Teo et al., 2011), (Al-Jabri & Sohail, 2012), (Dineshwar & Steven, 2013) and others presented evidence for a number of variables that influenced customer behavior intention to use mobile banking, however the study of mobile banking has been given little attention in literatures in Ethiopia.

The existing research in Ethiopia included mobile banking in electronic banking challenges and barriers (Ayana 2012), (Garedachew 2010). As per the researcher knowledge there is no study

conducted with regards to factors influencing usage of mobile banking in Ethiopia. This study therefore aims at filling that gap by shedding light on the main barriers of M-Banking adoption among customer of selected private and government banks in Ethiopia, Addis Ababa in order to create an understanding of this new technology in the banking sector. Justification of model used

Several researches on mobile banking adoption have combined the Diffusion of Innovation Theory and Technology Acceptance Model (Riquelme & Rios, 2010). Püschel et al., (2010) affirm that taken individually the models have limited predictive power but integrating the two into a single framework results into more predictability. In their investigation on mobile banking, Püschel et al., (2010) have integrated elements of the Technology acceptance model (TAM) of Davis with Roger's innovation diffusion theory. Chong et al., (2010) affirm that it is better to use TAM as a base model and extend it by including additional variables based on the study that is being carried out.

Akturan & Tezcan, (2012) have integrated TAM, perceived benefits and perceived risks to investigate mobile banking adoption. Wessels & Drennan, (2010) extended TAM by adding compatibility and perceived risk as constructs for their investigation on customer's acceptance of mobile banking. The study therefore combines TAM and IDT along with perceived risk and perceived trust and awareness constructs to investigate factors influencing mobile banking usage in Addis Ababa, Ethiopia. As a result for this study the factors influencing mobile banking usage are perceived ease of use, perceived usefulness, relative advantage, compatibility, perceived risk, perceived trust and awareness. None of these studies fully addresses the factors affecting utilization of mobile banking, their impact on commercial banks, and/or the challenges experienced by the user.

## 2.4. Conceptual Framework

Based upon the literature review the author has identified the basic requirements for addressing the factors influencing the practice of mobile banking in the case of Commercial Bank of Ethiopia. The model connects all the theoretical concepts together which ultimately represents the below conceptual framework.

Masinge K., (2010), shown how Perceived Risk, Trust, Perceived Usefulness and Perceived Ease of Usefulness lead users towards the adoption of Mobile Banking. Similarly, Cheah et al., (2011), has established his model by showing how Perceived Usefulness, Perceived Ease of Use, Relative Advantages, Perceived Risk, and Personal Innovativeness, influence Behavioral Intention to Adopt

Mobile Banking. Considering the above two models and relevant literatures discussed in Literature Review section the following model has been developed.

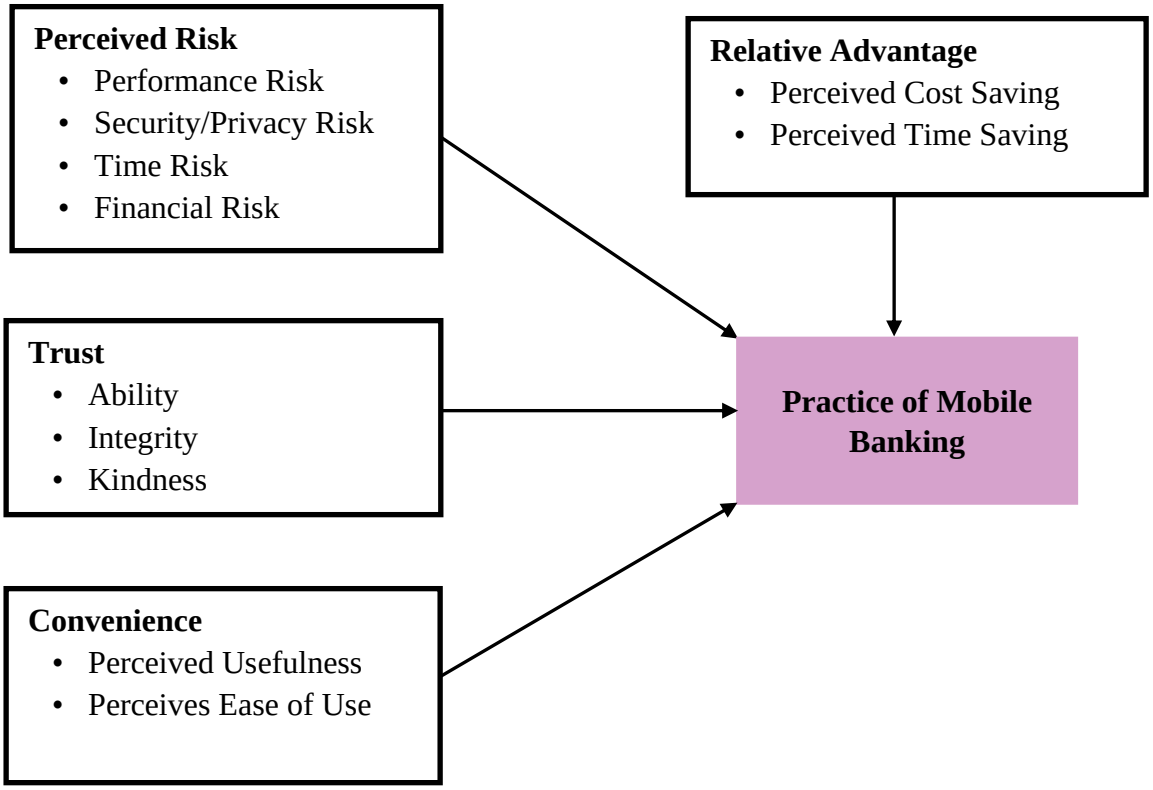


Figure 2.2: Conceptual framework of Practice of Mobile Banking
Source: Adopted from Kabir, (2013) and Modified by the Author

# Chapter Three: Research Methodology

## 3.1. Research Design and Approaches

Depending on the objectives of the study descriptive and explanatory research design would be used. According to Kothari, (2004) descriptive research studies are those studies which are concerned with describing the characteristics of a particular individual, or of a group, whereas diagnostic research studies determine the frequency with which something occurs or its association with something else. The researcher chooses the descriptive and explanatory design because the nature of the designs is helpful in describing the current situation of the mobile banking in detail. Therefore, the research design of this study would be both descriptive and explanatory type of research design.

In order to address the objectives of the study the research approach that would use was quantitative in nature. The researchers choose this method because a quantitative method was more appropriate for study as it involved testing the TAM model constructs. Also, reviewed literature under this study used the quantitative method (Onyebuchi, B., 2016; Soneka & Phiri, 2019).

## 3.2. Population and Sampling

### 3.2.1. Population

The total population of the study comprises of customers of ten major branches of Commercial Bank of Ethiopia, Kirkos District in Addis Ababa who are M-banking service users and non M-bank users. These branches was chosen because they offer M- banking services to customers and have vigorous promotion campaigns for their services. The study take place in Addis Ababa, which is the most populous in the country.

In order to determine the practice of mobile banking and to understand factors influencing the practice of mobile banking service among customers' questionnaire items directed at M-banking service users and non-users of M-banking customers of the banks understudy. Therefore, in this study 72,799 target population constituted Commercial Bank of Ethiopia, Kirkos District in Addis Ababa would be represented by the sample group, with that of all age groups, educational status and socio-economic who were knowledgeable with issues related for the study.

### 3.2.2. Sampling Technique

For this study the researcher selected ten (10) branches of CBE to undertake the survey. This is done from the fact that branches customers have relevant information related to the research input. Therefore, it is necessary to survey a sample of the population as an alternative to formulate predictions about the entire population. According to information obtained from CBE, there are currently 72,799 customers used mobile banking in these 10 branches in Kirkos district.

***Sample Size Determination***

Samplings is process of choosing a smaller and more manageable number of people to take part in the research process and generalize the results to the whole of the research population (Catherine, 2002).

The sample size was determine using the Catherine's (2002) formula:

$$n = \frac{N}{1 + N(\mathrm{e})^2}$$

Where $n$ = minimum sample size required for the study

$N$ = the population size = 72,799

$e$ = is the level of precision (e = 0.05)

$$n = \frac{N}{1 + N(\mathrm{e})^2} = \frac{72{,}799}{1 + 72{,}799(0.05)^2}$$

$$n = 397.81 = 398$$

398 + 10% non-response rate = 398 + 39.8 = **438**

Information obtained from MIS of CBE as of 2018/19 indicates that the branches located in Addis Ababa are at the same grade level based on number of employees, volume of transaction, variety of services provided, site location, facilities and staff strength, cash holding limits and other consideration. As for this study it is assumed that all branches of CBE operate in a similar manner and the same geographical areas with respect to policies and practices.

Respondents would be drawn from the sample size using the stratified sampling process. In a population made up of heterogeneous groups, stratified sampling is essential for obtaining a representative sample (Kothari, 1985). The total sample size (438) would then be held proportional

to of strata size using the proportional allocation process. The following formula can be used to determine the sample size for each stratum:

$$N_i = \frac{n(S)}{N}$$

Where $N$ = the total population = 72,799
$N_i$ = size of sample from each stratum
$n$ = total sample size = 438
$S$ = total number of populations in each stratum

**Table 3.1: Total Population of the Study**

| | **Sub-Strata (Branch Name)** | **Number of Population (S)** | **Size of sample from each stratum ($N_i$)** |
|---|---|---|---|
| 1 | Dil Gebeya Branch | 5,179 | 31 |
| 2 | Finfine Branch | 8,619 | 52 |
| 3 | Gofa Sefer Branch | 7,917 | 48 |
| 4 | Kirkos Kebele Branch | 8,312 | 50 |
| 5 | Lideta Branch | 7,148 | 43 |
| 6 | Meskel Square Branch | 6,335 | 38 |
| 7 | Temenja Yaj Branch | 6,296 | 38 |
| 8 | Mexico Branch | 7,644 | 46 |
| 9 | Sengatera Branch | 8,805 | 53 |
| 10 | Minasie Lema Branch | 6,544 | 39 |
| | **Total** | **72,799** | 438 |

$$N_i = \frac{n * S}{N} = \frac{438 * S}{\mathbf{72799}}$$

After selecting the specific branches, mobile banking users found in each of them are approached using convenient sampling method and those who are present on the bank for other service during questionnaire distribution are asked to fill the survey. Accordingly, from the returned questionnaires those who are deemed valid & genuine are used for further analysis.

## 3.3. Types and Sources of Data

To fulfill the purpose of this research work, both primary and secondary sources of data gathering would be employed. For primary data collection purpose, structured survey questionnaires would be

use. Data was collected from Commercial Bank of Ethiopia, Kirkos District customers. The evaluation survey would be conduct through personally distributed survey.

Secondary data was gathered by reviewing different reports of the Commercial Bank of Ethiopia, financial statements, manuals, policy documents, brochure, and journals relevant with the study were interpret and analyze to assess factors influencing the practice of mobile banking.

## 3.4. Data Collection Techniques

To collect primary data the questionnaires contained the first section is designed to collect respondents' demography and general information, the second section is structured question design to measure the variable of the factors influencing the practice of mobile banking in each dimension and with five points Likert scale (1=strongly agree, 2=disagree, 3=neutral, 4=agree and 5=strongly disagree).

The scale is best administered as part of factors influencing the practice of mobile banking. It is important to guarantee the anonymity of the respondent; customers are not asked to sign the questionnaire and no identifying code is placed on the form. The research assistants would be in charge of collecting the data. The objectives and scope of the research would be clearly told before data collection to the respondents to create a non-threatening atmosphere where respondents give candid responses.

## 3.5. Validity and Reliability

Validity is defined as a measure of truth or falsity of the data obtained through using the research instrument. In this study validity refers to the measure of truth or falsity of the assumption in the factors influencing the practice of mobile banking. Data not need to be only reliable but also true and accurate. If a measurement is valid, it is also reliable (Joppe, 2000). In an attempt to ensure the content validity, the questionnaires was developed on the basis by reviewing of the existing literature on the area of the study with little modification. In addition, the same set of questions would be administering to the respondent so that responses would be similar to facilitate comparison.

Reliability refers to the consistency and validity refers to the accuracy of the measure (Dunn, 1999). Among several measures of reliability Cronbach's alpha is the most commonly used measure of reliability (i.e., internal consistency). It was generalized by Cronbach (1951) to account for any

scoring method. Internal consistency measures consistency within the instrument and questions how well a set of items measures a particular behavior or characteristic within the test.

Table 3.2. Reliability Statistics

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|---|---|---|
| .772 | .755 | 31 |

Alpha value ranges between 0 and 1. The acceptable level of reliability has traditionally been with alpha value 0.70 or higher. However, an alpha value below 0.70 is considered as poor to measure reliability of items.

Table 3.3. Item-Total Statistics

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Squared Multiple Correlation | Cronbach's Alpha if Item Deleted |
|---|---|---|---|---|---|
| Perceived Risk | 12.9818 | 12.774 | .670 | .604 | .793 |
| Trust | 13.2512 | 13.617 | .625 | .657 | .705 |
| Convenience | 13.4274 | 13.247 | .656 | .527 | .796 |
| Relative Advantage | 13.3293 | 13.367 | .905 | .851 | .733 |
| Practice of Mobile Banking | 13.0722 | 18.200 | .484 | .152 | .807 |

The item-total statistics table above presents the Cronbach's Alpha if Item Deleted in the final column. We can see that removal of any question would result in a lower Cronbach's Alpha.

## 3.6. Method of Data Analysis

The data collected through the questionnaire were process and analyze using the statistical software called Statistical Package for the Social Science/SPSS/. Descriptive statistics method was use to analyze the data. Descriptive statistics enable to describe or compare variables numerically. The median and the mode are the two most commonly used ways of measuring central tendency. These two measures of central tendency were used to analyze and interpret the output of likert scale questionnaire data collected. In doing so, Correlation Coefficients and Multiple Regression Analysis were used to analyze the data. The research findings were organizing and present in form of words and numbers by using frequency tables, histogram, charts and simple percentage method. In addition to the inferential analysis would be use statistical tools such as coefficient of correlation, multiple linear regression analysis, sample T-test, and ANOVA (analysis of variance). To summarize and

create a clear picture for the reader to understand the result of the study figures, tables, and other tools were used.

## 3.7. Ethical Considerations

The researcher would consider every requirement of research ethics to establish trust with the respondents and approached also informed about the aim of the research. Furthermore, the respondents would be informed that their response would be kept confidential and use for academic purpose only, in verbal communication and in writing. After getting the consent of the respondents, they were provided with a self-administered questionnaire designed for the purpose of this study, so that they complete and return it back. The researcher did not force customers to participate without their willing.

# Chapter Four

# 4. Data Analysis, Interpretation and Discussion

## 4.1. Introduction

This section deals with the analysis, interpretation and discussion of data collected to determine the factors influencing the practice of mobile banking in the case of commercial bank of Ethiopia, Kirkos District, Addis Ababa. Therefore, the findings from the questionnaire and the results are discussed as per the objectives in this chapter. It includes a report of results from descriptive analysis like frequency tables and figures that was assessed the practice of mobile banking. It also includes a report of results from correlation of coefficients that describe the relationship of practice of mobile banking and factors influencing on it. Finally, regression analysis would be done to show the strength of its effect.

The study involved 438 questionnaires which were issued to collect data from respondent. 386 questionnaires were filled and returned for analysis which gave a response rate of 88.1%. This response rate was considered adequate for analysis to determine the factors influencing the practice of mobile banking in the case of commercial bank of Ethiopia, Kirkos District, Addis Ababa. According to Awino, (2011), a response rate of 65 percent is acceptable for such studies.

## 4.2. Socio-demographic Characteristics of the Respondents

The personal profile of the respondents is analyzed as per their age, gender, years of schooling of the respondents, and years you have used the mobile banking. Descriptive statistics was performed on the demographic variables as a means of describing the respondents. The final study involved 288 respondents of which 40.6% were female and 59.4% were male, as indicated below in Table 4.1.

Further, majority of the respondents were within the age between 30 – 34 years (50.7%) followed by those with age group 25 – 29 years (31.3%) and 20 – 24 years (18.1%). When the researcher assess respondent with their years of schooling, 12 – 15 years (43.8%), above 15 years (30.2%), 10 – 12 years (16.0%), and below 10 years (10.1%), of the respondents were having from larger to smaller, respectively. The highest proportion of respondents were used the mobile banking 3 – 5 years (47.6%) followed by 1 – 3 years (35.8%) and 1ess than 1 year (16.7%) were almost at lowest.

Therefore, from the findings of the below demographic results the researcher can observe that the sample is reasonably representative.

Table 4.1: Summary Profile of the Respondents.

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| **Gender** | | | | |
| Male | 225 | 58.3 | 58.3 | 58.3 |
| Female | 161 | 41.7 | 41.7 | 100.0 |
| Total | 386 | 100.0 | 100.0 | |
| **Age** | | | | |
| 20 – 24 Years | 83 | 21.5 | 21.5 | 21.5 |
| 25 – 29 Years | 129 | 33.4 | 33.4 | 54.9 |
| 30 – 34 Years | 174 | 45.1 | 45.1 | 100.0 |
| Total | 386 | 100.0 | 100.0 | |
| **Years of Schooling of the Respondents** | | | | |
| Below 10 Years | 29 | 7.5 | 7.5 | 7.5 |
| 10 – 12 Years | 68 | 17.6 | 17.6 | 25.1 |
| 13 – 15 Years | 165 | 42.7 | 42.7 | 67.9 |
| Above 15 Years | 124 | 32.1 | 32.1 | 100.0 |
| Total | 386 | 100.0 | 100.0 | |
| **How many years you have used the mobile banking of Commercial Bank of Ethiopia** | | | | |
| Less than 1 Year | 67 | 17.4 | 17.4 | 17.4 |
| 1 – 3 Years | 131 | 33.9 | 33.9 | 51.3 |
| 3 – 5 Years | 188 | 48.7 | 48.7 | 100.0 |
| Total | 386 | 100.0 | 100.0 | |

(Source: Own Survey Result, 2021)

Onyebuchi, B., et al., (2016), Dineshwar & Steven, (2013), the researchers revealed that age, gender and salary had no influence on practice of mobile banking but rather, the study revealed that the level of adoption was still low among the middle-aged correspondents compared to the aged even though m-banking is a growing trend.

In this study, as clearly described in Table 4.2 below, the mean level of age, gender, years of schooling of the respondents, and years you have used the mobile banking were found 2.24, 1.42, 2.99, and 2.31 with standard deviation of .782, .494, .894, and .751 respectively.

Table 4.2: Frequencies of Demographic Characteristics.

| | | Years of Schooling of the Respondents | Age | Gender | How many years you have used the mobile banking of Commercial Bank of Ethiopia |
|---|---|---|---|---|---|
| N | Valid | 386 | 386 | 386 | 386 |
| | Missing | 0 | 0 | 0 | 0 |
| Mean | | 2.99 | 2.24 | 1.42 | 2.31 |
| Standard Deviation | | .894 | .782 | .494 | .751 |

(Source: Own Survey Result, 2021)

## 4.3. Descriptive Analysis

### 4.3.1. Descriptive Analysis of Factors Influencing the Practice of Mobile Banking

This section is made up of the descriptive part of the results. In this section responses obtained on the general consideration of factors influencing the practice of mobile banking were presented and interpreted. The results are shown and discussed below:

#### 4.3.1.1. Perceived Risk

Perceived Risk using mobile banking was assessed on performance risk, security/privacy risk, time risk and financial risk. The results on the assessment are presented in table 4.3 below.

According to the result the average mean 3.17 which shows that the respondents were agreed on the indicator above mentioned. All variable mean and standard deviation are presented respectively what the respondent were responded. They were agreed that mean of the perceived risk 3.73 and 1.647 due to transactions errors there might be loss of money, about 3.43 and 1.744 providing personal privacy information over mobile banking may not be safe, 3.29 and 1.712 due to poor network of mobile in some areas may take a lot of time to do transactions through mobile banking.

Whereas, they were disagreed that mean and standard deviation of the perceived risk 2.56 and 1.600 mobile banking services may not perform well and process payments incorrectly, 2.64 and 1.751 there is a fear of using mobile banking that other people may access my account through hacking or other means, 2.84 and 1.742 usage of mobile banking leads to time fixing payments errors respectively.

In summary the average mean shows 3.17 and .985 standard deviation of the perceived risk was highly important for using mobile banking. So that Commercial Bank of Ethiopia has to focus and recognize this positive implication of the perceived risk of mobile banking practice.

Table 4.3: Descriptive Statistics on Perceived Risk.

| | | Frequency | Percent | Valid Percent | Cumulative Percent | Mean | Std. Deviation |
|---|---|---|---|---|---|---|---|
| Mobile banking services may not perform well because of network problems. | Strongly Disagree | 108 | 28.0 | 28.0 | 28.0 | 3.09 | 1.662 |
| | Disagree | 54 | 14.0 | 14.0 | 42.0 | | |
| | Neutral | 47 | 12.2 | 12.2 | 54.1 | | |
| | Agree | 39 | 10.1 | 10.1 | 64.2 | | |
| | Strongly Agree | 138 | 35.8 | 35.8 | 100.0 | | |
| Mobile banking services may not perform well and process payments incorrectly | Strongly Disagree | 162 | 42.0 | 42.0 | 42.0 | 2.56 | 1.600 |
| | Disagree | 33 | 8.5 | 8.5 | 50.5 | | |
| | Neutral | 63 | 16.3 | 16.3 | 66.8 | | |
| | Agree | 45 | 11.7 | 11.7 | 78.5 | | |
| | Strongly Agree | 83 | 21.5 | 21.5 | 100.0 | | |
| The users' friends, family and colleagues would think less of them in case of any wrong in transactions through mobile banking | Strongly Disagree | 151 | 39.1 | 39.1 | 39.1 | 3.11 | 1.801 |
| | Disagree | 34 | 8.8 | 8.8 | 47.9 | | |
| | Neutral | 38 | 9.8 | 9.8 | 57.8 | | |
| | Agree | 19 | 4.9 | 4.9 | 62.7 | | |
| | Strongly Agree | 144 | 37.3 | 37.3 | 100.0 | | |
| Usage of mobile banking leads to time fixing payments errors | Strongly Disagree | 159 | 41.2 | 41.2 | 41.2 | 2.84 | 1.742 |
| | Disagree | 20 | 5.2 | 5.2 | 46.4 | | |
| | Neutral | 36 | 9.3 | 9.3 | 55.7 | | |
| | Agree | 50 | 13.0 | 13.0 | 68.7 | | |
| | Strongly Agree | 121 | 31.3 | 31.3 | 100.0 | | |
| Due to poor network of mobile in some areas may take a lot of time to do transactions through mobile banking | Strongly Disagree | 116 | 30.1 | 30.1 | 30.1 | 3.29 | 1.712 |
| | Disagree | 20 | 5.2 | 5.2 | 35.2 | | |
| | Neutral | 36 | 9.3 | 9.3 | 44.6 | | |
| | Agree | 57 | 14.8 | 14.8 | 59.3 | | |
| | Strongly Agree | 157 | 40.7 | 40.7 | 100.0 | | |
| Providing personal privacy information over mobile banking may not be safe | Strongly Disagree | 110 | 28.5 | 28.5 | 28.5 | 3.43 | 1.744 |
| | Disagree | 15 | 3.9 | 3.9 | 32.4 | | |
| | Neutral | 32 | 8.3 | 8.3 | 40.7 | | |
| | Agree | 45 | 11.7 | 11.7 | 52.3 | | |
| | Strongly Agree | 184 | 47.7 | 47.7 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| There is a fear of using mobile banking that other people may access my account through hacking or other means | Strongly Disagree | 185 | 47.9 | 47.9 | 47.9 | 2.64 | 1.751 |
| | Disagree | 25 | 6.5 | 6.5 | 54.4 | | |
| | Neutral | 29 | 7.5 | 7.5 | 61.9 | | |
| | Agree | 36 | 9.3 | 9.3 | 71.2 | | |
| | Strongly Agree | 111 | 28.8 | 28.8 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| When transferring money through mobile banking, the users afraid that they will lose money due to careless and mistakes | Strongly Disagree | 128 | 33.2 | 33.2 | 33.2 | 3.09 | 1.740 |
| | Disagree | 31 | 8.0 | 8.0 | 41.2 | | |
| | Neutral | 37 | 9.6 | 9.6 | 50.8 | | |
| | Agree | 44 | 11.4 | 11.4 | 62.2 | | |
| | Strongly Agree | 146 | 37.8 | 37.8 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| Due to transactions errors there might be loss of money | Strongly Disagree | 96 | 24.9 | 24.9 | 24.9 | 3.73 | 1.647 |
| | Disagree | 14 | 3.6 | 3.6 | 28.5 | | |
| | Neutral | 18 | 4.7 | 4.7 | 33.2 | | |
| | Agree | 49 | 12.7 | 12.7 | 45.9 | | |
| | Strongly Agree | 209 | 54.1 | 54.1 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |

Average Mean = **3.17** Average Standard Deviation = **.985**

(Source: Own Survey Result, 2021)

### 4.3.1.2. Trust

Table 4.4: Descriptive Statistics on Trust

| | | Frequency | Percent | Valid Percent | Cumulative Percent | Mean | Std. Deviation |
|---|---|---|---|---|---|---|---|
| Ability of the service provider has important influence in choosing mobile banking service | Strongly Disagree | 96 | 24.9 | 24.9 | 24.9 | 3.78 | 1.346 |
| | Disagree | 14 | 3.6 | 3.6 | 28.5 | | |
| | Neutral | 18 | 4.7 | 4.7 | 33.2 | | |
| | Agree | 49 | 12.7 | 12.7 | 45.9 | | |
| | Strongly Agree | 209 | 54.1 | 54.1 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| The mobile banking service provider has the ability to provide mobile banking service | Strongly Disagree | 47 | 12.2 | 12.2 | 12.2 | 3.85 | 1.298 |
| | Disagree | 18 | 4.7 | 4.7 | 16.8 | | |
| | Neutral | 37 | 9.6 | 9.6 | 26.4 | | |
| | Agree | 133 | 34.5 | 34.5 | 60.9 | | |
| | Strongly Agree | 151 | 39.1 | 39.1 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| The service providers' ability to mobile banking service is similar to its ability to provide traditional banking service | Strongly Disagree | 51 | 13.2 | 13.2 | 13.2 | 3.48 | 1.351 |
| | Disagree | 31 | 8.0 | 8.0 | 21.2 | | |
| | Neutral | 85 | 22.0 | 22.0 | 43.3 | | |
| | Agree | 102 | 26.4 | 26.4 | 69.7 | | |
| | Strongly Agree | 117 | 30.3 | 30.3 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| Kindness of the service provider has important influence in choosing mobile banking service | Strongly Disagree | 76 | 19.7 | 19.7 | 19.7 | 2.90 | 1.398 |
| | Disagree | 63 | 16.3 | 16.3 | 36.0 | | |
| | Neutral | 96 | 24.9 | 24.9 | 60.9 | | |
| | Agree | 73 | 18.9 | 18.9 | 79.8 | | |
| | Strongly Agree | 78 | 20.2 | 20.2 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| The mobile Banking service providers in CBE tend to provide benevolent service. | Strongly Disagree | 81 | 21.0 | 21.0 | 21.0 | 2.84 | 1.355 |
| | Disagree | 97 | 25.1 | 25.1 | 46.1 | | |
| | Neutral | 68 | 17.6 | 17.6 | 63.7 | | |
| | Agree | 78 | 20.2 | 20.2 | 83.9 | | |
| | Strongly Agree | 62 | 16.1 | 16.1 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| Integrity of the service provider has important influence in choosing mobile banking service | Strongly Disagree | 67 | 17.4 | 17.4 | 17.4 | 3.09 | 1.352 |
| | Disagree | 81 | 21.0 | 21.0 | 38.3 | | |
| | Neutral | 77 | 19.9 | 19.9 | 58.3 | | |
| | Agree | 96 | 24.9 | 24.9 | 83.2 | | |
| | Strongly Agree | 65 | 16.8 | 16.8 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| Integrity of the service provider will make the mobile banking a better option than the traditional banking | Strongly Disagree | 132 | 34.2 | 34.2 | 34.2 | 2.23 | 1.284 |
| | Disagree | 87 | 22.5 | 22.5 | 56.7 | | |
| | Neutral | 74 | 19.2 | 19.2 | 75.9 | | |
| | Agree | 54 | 14.0 | 14.0 | 89.9 | | |
| | Strongly Agree | 39 | 10.1 | 10.1 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| The mobile Banking service providers in CBE tend to provide integral service | Strongly Disagree | 117 | 30.3 | 30.3 | 30.3 | 2.59 | 1.309 |
| | Disagree | 98 | 25.4 | 25.4 | 55.7 | | |
| | Neutral | 74 | 19.2 | 19.2 | 74.9 | | |
| | Agree | 64 | 16.6 | 16.6 | 91.5 | | |
| | Strongly Agree | 33 | 8.5 | 8.5 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |

Average Mean = **3.12** Average Standard Deviation = **1.069**

There are three dimensions of trust namely ability, integrity and kindness. This would be observed from three perspectives: the bank, mobile network provider and wireless infrastructure. In the following table respondents were asked to evaluate ability, integrity and kindness of mobile banking service.

The Table 4.4 shows above that among 386 respondents the highest mean and standard deviation 3.85 and 1.298 response were responded agreed on the mobile banking service provider has the ability to provide mobile banking service, and the lowest mean and standard deviation 2.23 and 1.284 integrity of the service provider will make the mobile banking a better option than the traditional banking.

In summary the average mean shows 3.12 and 1.069 standard deviation of the trust was highly important for using mobile banking with customer choice of ability, integrity, and kindness of the bank. So that as practice of mobile banking in Commercial Bank of Ethiopia has to focus and recognize on this positive implication of customer trust.

#### 4.3.1.3. Convenience

In order to evaluate perceived usefulness and perceives ease of use of mobile banking the questionnaire was distributed for customer of Commercial Bank of Ethiopia. The results of this survey are presented in table 4.5 below.

According to the results of survey average mean of 2.82 and 1.119 standard deviation shows that the respondent were agreed on the indicator what the researcher as a measurement factor. The highest mean for this factor is 3.11 and standard deviation of 1.386 respondent were agreed on interaction with mobile banking does not require a lot of mental effort. On the other hand, the mean resulted disagree on the factor is 2.45 and standard deviation of 1.371 learning to use mobile banking would be easy. In fact, Perceived ease of use is the degree to which a user believes that using a particular service would be free of effort while perceived usefulness refers to the degree to which an individual perceives that using a particular system would enhance his/her job performance. Clearly, perceived usefulness refers to the advantages that mobile banking offers and whether using a mobile phone is useful for performing financial transactions. Perceived ease of use, on the other hand, relates to whether mobile banking is easy to learn and use (Aldás-Manzano et al, 2012a).

Table 4.5: Descriptive Statistics on Convenience

| | | Frequency | Percent | Valid Percent | Cumulative Percent | Mean | Std. Deviation |
|---|---|---|---|---|---|---|---|
| Using mobile banking would enable the users to accomplish tasks more quickly | Strongly Disagree | 102 | 26.4 | 26.4 | 26.4 | 2.70 | 1.379 |
| | Disagree | 93 | 24.1 | 24.1 | 50.5 | | |
| | Neutral | 70 | 18.1 | 18.1 | 68.7 | | |
| | Agree | 77 | 19.9 | 19.9 | 88.6 | | |
| | Strongly Agree | 44 | 11.4 | 11.4 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| Using mobile banking would make it easier for the users to carry out tasks. | Strongly Disagree | 96 | 24.9 | 24.9 | 24.9 | 2.70 | 1.384 |
| | Disagree | 14 | 3.6 | 3.6 | 28.5 | | |
| | Neutral | 18 | 4.7 | 4.7 | 33.2 | | |
| | Agree | 49 | 12.7 | 12.7 | 45.9 | | |
| | Strongly Agree | 209 | 54.1 | 54.1 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| Mobile banking is useful. | Strongly Disagree | 93 | 24.1 | 24.1 | 24.1 | 2.75 | 1.325 |
| | Disagree | 86 | 22.3 | 22.3 | 46.4 | | |
| | Neutral | 75 | 19.4 | 19.4 | 65.8 | | |
| | Agree | 92 | 23.8 | 23.8 | 89.6 | | |
| | Strongly Agree | 40 | 10.4 | 10.4 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| Overall, using mobile banking is advantageous. | Strongly Disagree | 105 | 27.2 | 27.2 | 27.2 | 2.82 | 1.430 |
| | Disagree | 76 | 19.7 | 19.7 | 46.9 | | |
| | Neutral | 64 | 16.6 | 16.6 | 63.5 | | |
| | Agree | 87 | 22.5 | 22.5 | 86.0 | | |
| | Strongly Agree | 54 | 14.0 | 14.0 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| Learning to use mobile banking would be easy. | Strongly Disagree | 133 | 34.5 | 34.5 | 34.5 | 2.45 | 1.371 |
| | Disagree | 73 | 18.9 | 18.9 | 53.4 | | |
| | Neutral | 69 | 17.9 | 17.9 | 71.2 | | |
| | Agree | 82 | 21.2 | 21.2 | 92.5 | | |
| | Strongly Agree | 29 | 7.5 | 7.5 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| Interaction with mobile banking does not require a lot of mental effort. | Strongly Disagree | 87 | 22.5 | 22.5 | 22.5 | 3.11 | 1.386 |
| | Disagree | 55 | 14.2 | 14.2 | 36.8 | | |
| | Neutral | 74 | 19.2 | 19.2 | 56.0 | | |
| | Agree | 99 | 25.6 | 25.6 | 81.6 | | |
| | Strongly Agree | 71 | 18.4 | 18.4 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| It is easy to use mobile banking to accomplish banking tasks. | Strongly Disagree | 109 | 28.2 | 28.2 | 28.2 | 2.78 | 1.394 |
| | Disagree | 68 | 17.6 | 17.6 | 45.9 | | |
| | Neutral | 87 | 22.5 | 22.5 | 68.4 | | |
| | Agree | 71 | 18.4 | 18.4 | 86.8 | | |
| | Strongly Agree | 51 | 13.2 | 13.2 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| The usage of mobile banking is easier than the traditional banking. | Strongly Disagree | 109 | 28.2 | 28.2 | 28.2 | 2.55 | 1.363 |
| | Disagree | 78 | 20.2 | 20.2 | 48.4 | | |
| | Neutral | 79 | 20.5 | 20.5 | 68.9 | | |
| | Agree | 68 | 17.6 | 17.6 | 86.5 | | |
| | Strongly Agree | 52 | 13.5 | 13.5 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |

Average Mean = **2.82** Average Standard Deviation = 1**.119**

### 4.3.1.4. Relative Advantage

Table 4.6: Descriptive Statistics on Relative Advantage

| | | Frequency | Percent | Valid Percent | Cumulative Percent | Mean | Std. Deviation |
|---|---|---|---|---|---|---|---|
| The mobile banking service providers in CBE need to bear heavy cost to purchase equipment for such service | Strongly Disagree | 107 | 27.7 | 27.7 | 27.7 | 3.12 | 1.414 |
| | Disagree | 62 | 16.1 | 16.1 | 43.8 | | |
| | Neutral | 96 | 24.9 | 24.9 | 68.7 | | |
| | Agree | 65 | 16.8 | 16.8 | 85.5 | | |
| | Strongly Agree | 56 | 14.5 | 14.5 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| The mobile banking access cost is expensive to use. | Strongly Disagree | 46 | 11.9 | 11.9 | 100.0 | 3.22 | 1.395 |
| | Disagree | 82 | 21.2 | 21.2 | 53.6 | | |
| | Neutral | 77 | 19.9 | 19.9 | 73.6 | | |
| | Agree | 56 | 14.5 | 14.5 | 88.1 | | |
| | Strongly Agree | 125 | 32.4 | 32.4 | 32.4 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| The mobile banking transaction fee is expensive. | Strongly Disagree | 76 | 19.7 | 19.7 | 19.7 | 2.91 | 1.489 |
| | Disagree | 63 | 16.3 | 16.3 | 36.0 | | |
| | Neutral | 96 | 24.9 | 24.9 | 60.9 | | |
| | Agree | 73 | 18.9 | 18.9 | 79.8 | | |
| | Strongly Agree | 78 | 20.2 | 20.2 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| It takes much time to learn about the use of mobile banking | Strongly Disagree | 75 | 19.4 | 19.4 | 19.4 | 3.58 | 1.382 |
| | Disagree | 66 | 17.1 | 17.1 | 36.5 | | |
| | Neutral | 43 | 11.1 | 11.1 | 47.7 | | |
| | Agree | 133 | 34.5 | 34.5 | 82.1 | | |
| | Strongly Agree | 69 | 17.9 | 17.9 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| The usage of mobile banking service enables to get banking service quickly. | Strongly Disagree | 65 | 16.8 | 16.8 | 16.8 | 3.29 | 1.292 |
| | Disagree | 68 | 17.6 | 17.6 | 34.5 | | |
| | Neutral | 52 | 13.5 | 13.5 | 47.9 | | |
| | Agree | 120 | 31.1 | 31.1 | 79.0 | | |
| | Strongly Agree | 81 | 21.0 | 21.0 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| Mobile banking is faster than traditional banking | Strongly Disagree | 66 | 17.1 | 17.1 | 100.0 | 3.09 | 1.336 |
| | Disagree | 50 | 13.0 | 13.0 | 42.2 | | |
| | Neutral | 62 | 16.1 | 16.1 | 58.3 | | |
| | Agree | 95 | 24.6 | 24.6 | 82.9 | | |
| | Strongly Agree | 113 | 29.3 | 29.3 | 29.3 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| Average Mean = **3.19** | Average Standard Deviation = 1**.044** | | | | | | |

In order to evaluate perceived cost and time saving when the customer is using mobile banking the questionnaire was distributed for customer of Commercial Bank of Ethiopia. The results of this survey are presented in table 4.6 above.

According to the result the average mean 3.19 which shows that the respondents were agreed on the indicator above mentioned. All variable mean and standard deviation are presented respectively what the respondent were responded. They were agreed that mean of the relative advantage 3.58 and 1.382 it takes much time to learn about the use of mobile banking, about 3.29 and 1.292 the usage of mobile banking service enables to get banking service quickly, 3.22 and 1.395 the mobile banking access cost is expensive to use. Whereas, they were disagreed that mean and standard deviation of the relative advantage 2.91 and 1.489 the mobile banking transaction fee is expensive, 3.09 and 1.336 mobile banking is faster than traditional banking respectively.

In summary the average mean shows 3.19 and 1.044 standard deviation of the relative advantage was highly important for using mobile banking. So that as practice of mobile banking in Commercial Bank of Ethiopia has to focus and recognize on this positive implication that the perceived cost and time saving.

#### 4.3.1.5. Practice of Mobile Banking

In order to analyses the practice of mobile banking the questionnaire are distributed to the respondent. The results of this survey are presented in table 4.7 below. Among the description, it found the average mean and standard deviation 3.443 and 0.780 respectively shows that the respondent was agreed above all of factors as the most important factor that determine the practice of mobile banking Commercial Bank of Ethiopia. The respondents were agreed as the mean and standard deviation of the practice of mobile banking 3.66 and 1.315 the researcher find mobile banking useful for my banking needs, 3.65 and 1.366 reduction of queues in banking halls due to anywhere anytime service, 3.51 and 1.323 Mobile banking is faster than visiting a bank or using phone banking respectively. On the other hand, the respondents were disagreed as the mean and standard deviation of the practice of mobile banking 3.08 and 1.407 mobile banking service is not complex, so it doesn't take me time to learn how to use it, 3.18 and 1.406 using mobile banking enables me to do my banking transactions quicker as it is convenient and easiest for me to use respectively.

In summary the average mean shows 3.443 and 0.780 standard deviation of the relative advantage was highly important for using mobile banking. So that as practice of mobile banking in Commercial Bank of Ethiopia has to focus and recognize on this positive implication as presented in table 4.7.

Table 4.7: Identify the Practice of Mobile Banking on Commercial Bank of Ethiopia.

| | | Frequency | Percent | Valid Percent | Cumulative Percent | Mean | Std. Deviation |
|---|---|---|---|---|---|---|---|
| Using mobile banking enables me to do my banking transactions quicker as it is convenient and easiest for me to use | Strongly Disagree | 61 | 15.8 | 15.8 | 15.8 | 3.18 | 1.406 |
| | Disagree | 70 | 18.1 | 18.1 | 33.9 | | |
| | Neutral | 80 | 20.7 | 20.7 | 54.7 | | |
| | Agree | 80 | 20.7 | 20.7 | 75.4 | | |
| | Strongly Agree | 95 | 24.6 | 24.6 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| Mobile banking service is not complex, so it doesn't take me time to learn how to use it. | Strongly Disagree | 62 | 16.1 | 16.1 | 16.1 | 3.08 | 1.407 |
| | Disagree | 83 | 21.5 | 21.5 | 37.6 | | |
| | Neutral | 74 | 19.2 | 19.2 | 56.7 | | |
| | Agree | 79 | 20.5 | 20.5 | 77.2 | | |
| | Strongly Agree | 88 | 22.8 | 22.8 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| By using mobile banking, I can access my fund any time I want to. | Strongly Disagree | 45 | 11.7 | 11.7 | 11.7 | 3.39 | 1.337 |
| | Disagree | 48 | 12.4 | 12.4 | 24.1 | | |
| | Neutral | 67 | 17.4 | 17.4 | 41.5 | | |
| | Agree | 136 | 35.2 | 35.2 | 76.7 | | |
| | Strongly Agree | 90 | 23.3 | 23.3 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| Mobile banking is faster than visiting a bank or using phone banking | Strongly Disagree | 31 | 8.0 | 8.0 | 8.0 | 3.51 | 1.323 |
| | Disagree | 72 | 18.7 | 18.7 | 26.7 | | |
| | Neutral | 55 | 14.2 | 14.2 | 40.9 | | |
| | Agree | 111 | 28.8 | 28.8 | 69.7 | | |
| | Strongly Agree | 117 | 30.3 | 30.3 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| I find mobile banking useful for my banking needs | Strongly Disagree | 38 | 9.8 | 9.8 | 9.8 | 3.66 | 1.315 |
| | Disagree | 44 | 11.4 | 11.4 | 21.2 | | |
| | Neutral | 60 | 15.5 | 15.5 | 36.8 | | |
| | Agree | 110 | 28.5 | 28.5 | 65.3 | | |
| | Strongly Agree | 134 | 34.7 | 34.7 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| Reduction of queues in banking halls due to anywhere anytime service | Strongly Disagree | 50 | 13.0 | 13.0 | 13.0 | 3.65 | 1.366 |
| | Disagree | 33 | 8.5 | 8.5 | 21.5 | | |
| | Neutral | 44 | 11.4 | 11.4 | 32.9 | | |
| | Agree | 131 | 33.9 | 33.9 | 66.8 | | |
| | Strongly Agree | 128 | 33.2 | 33.2 | 100.0 | | |
| | Total | 386 | 100.0 | 100.0 | | | |
| Average Mean = **3.443** Average Standard Deviation = **.780** | | | | | | | |

(Source: Own Survey Result, 2021)

## 4.4. Inferential Statistics

Various statistical methods used for data analysis make assumptions about normality, including correlation, regression, t-tests, and analysis of variance. Before going to analytical tests an assessment of the normality of data is a prerequisite because normal data is an underlying assumption in parametric testing (Bland M, 2015).

### 4.4.1. Normality of the Error Term Distribution

Screening data for assessing the normalization of variables is a critical step in multivariate analysis (Hair, 2010). Normality refers to the shape of a normal distribution of the matric variable (Robert, 2006). For variables with normal distribution, the values of skewness and kurtosis are zero, and any value other than zero indicated deviation from normality (Hair, 2010). In order to make regression analysis the researcher was conducted test of normality, test of multicollinearity, test of autocorrelation, and test of correlation.

Table 4.8: Test of Normality

| | Skewness | | Kurtosis | |
|---|---|---|---|---|
| | Statistic | Std. Error | Statistic | Std. Error |
| Perceived Risk | .268 | .124 | -.616 | .248 |
| Trust | -.185 | .124 | -.697 | .248 |
| Convenience | -.421 | .124 | -.848 | .248 |
| Relative Advantage | -.056 | .124 | -.754 | .248 |
| Practice of Mobile Banking | -.097 | .124 | -.962 | .248 |

a. Lilliefors Significance Correction

The normality tests are used to determine whether a data set is modeled for normal a distribution is normal or nearly normal. Statistically, two numerical measures of shape – Skewness and excess kurtosis- can be used to test for normality. If Skewness is not close to zero, then the data set is not normally distributed and if Skewness less than – 1 or greater than 1, the distribution is highly skewed (Good Data Corporation, 2007). According to above table 4.8 depicted result shows that all variable are under acceptable range for normality. The index of skewness takes the value zero for a symmetrical distribution. A positive skewness value indicates right skew while a negative value indicates left skew (Tabachnick and Fidell, 2001).

## 4.4.2. Test of Autocorrelation

Durbin-Watson test, published in 1950, is the best known test for autocorrelation. This assumption requires that the errors terms over time is zero. If the errors are correlated with one another, it is stated that they auto correlated value greater than 2 indicates a negative correlation, whereas the value below two indicates a positive correlation (Andy F., 2009). In order to perform the test, the researcher used Durbin-Watson in SPSS. As per table 4.8 in the output shown, includes information about the quantity of variance that is explained by predictor variables (perceived risk, trust, convenience, relative advantage and practice of mobile banking). The first statistic, R, is the multiple correlation coefficients between all of the predictor variables and the dependent variable. In this model, the value is 0.9110 (91.1%), which indicates that there is a great deal of variance shared by the independent variables and the dependent variables. The next value, R Square, is simply the squared value of R. This is frequently used to describe the goodness-of-fit or the amount of variance explained by a given set of predictor variables. In this table, the value is 0.862, which indicates that 86.2% of the variance in the dependent variable is explained by the independent variables in the model. Thus, the result shows that the predicators identified in this study were factors that high the measure of the practice of mobile banking.

Table 4.9: Model Summary [b] result of Autocorrelation test

**Model Summary [b]**

| | | | | | Change Statistics | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | R Square Change | F Change | Df1 | Df2 | Sig. F Change | Durbin - Watson |
| 1 | .9110[a] | .862 | .858 | .13590 | .862 | 105.825 | 3 | 80 | .000 | .086 |

a. Predictors: (Constant), perceived risk, trust, convenience, and relative advantage.

b. Dependent Variable: Practice of mobile banking

(Source: Own Survey Result, 2021)

## 4.4.3. Multi-collinearity Analysis

To check whether these predictor variables are highly correlated with each other researcher used Multicollinearity. Statistics indicates that all values of variance inflation factor (VIF) below 10.00 as correlated (Morrow-Howell, 1994). As shown in Table 4.10 below the researcher checked the assumption for multicollinearity among these three independents (predictor) variables and found out

that the predicted variables are highly multicollinear. The result of correlation matrix shows that all VIF values are well below 10 and the tolerance level for all variables is above 0.2. This indicating that the assumption is met, and the researcher was safe to say that variables are strongly correlated.

The output above shows that the VIF may be moderately correlated. Therefore, diagnosing the VIF and tolerance values, multicollinearity is not a problem and this would tell us there is an opportunity to overcome the overall regression analysis.

Table 4.10: Multicollinear Analysis of Independent variables with Practice of Mobile Banking

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | .806 | .653 | | 1.235 | .219 | | |
| | Perceived Risk | -.200 | .081 | -.191 | -2.485 | .014 | .483 | 2.072 |
| | Trust | .249 | .059 | .332 | 4.218 | .000 | .463 | 2.161 |
| | Convenience | .357 | .076 | .425 | 3.561 | .010 | .385 | 1.195 |
| | Relative Advantage | .417 | .042 | .568 | 9.904 | .000 | .869 | 1.150 |

a. Dependent Variable: Practice of Mobile Banking
(Source: Own Survey Result, 2021)

### 4.4.4. Correlation Analysis

In this section, correlation analysis conducted to assess the factors influencing the practice of mobile banking in the case of commercial bank of Ethiopia. And to identify the cost effectiveness of multimodal transport operation and rail transport with relationship between terminal ownership status and container dwell time would be done by the correlation analysis technique. This provided correlation Coefficients which indicated the strength and direction of relationship. The p-value also indicated the probability of this relationships significant.

Table 4.11 below shows that there is a positive significant relationship between perceived risk, trust, convenience, relative advantage and Practice of Mobile Banking. Perceived risk, trust, convenience, and relative advantage is at (r=.304** p<0.01), (r=.300** p<0.01), (r=.316** p<0.01), and (r=.384** p<0.01) respectively. The correlation between variable was direct which means as perceived risk, trust, convenience, and relative advantage is good practice of mobile banking. Thus, It can be concluded that there is strong relationship between the independent and the dependent variable.

Table 4.11: Correlation Analysis

| | | Perceived Risk | Trust | Convenience | Relative Advantage | Practice of Mobile Banking |
|---|---|---|---|---|---|---|
| Perceived Risk | Pearson Correlation | 1 | .465** | .574** | .752** | .304** |
| | Sig. (2-tailed) | | .000 | .000 | .000 | .000 |
| | N | 386 | 386 | 386 | 386 | 386 |
| Trust | Pearson Correlation | .465** | 1 | .460** | .780** | .300** |
| | Sig. (2-tailed) | .000 | | .000 | .000 | .000 |
| | N | 386 | 386 | 386 | 386 | 386 |
| Convenience | Pearson Correlation | .574** | .460** | 1 | .709** | .316** |
| | Sig. (2-tailed) | .000 | .000 | | .000 | .000 |
| | N | 386 | 386 | 386 | 386 | 386 |
| Relative Advantage | Pearson Correlation | .752** | .780** | .709** | 1 | .384** |
| | Sig. (2-tailed) | .000 | .000 | .000 | | .000 |
| | N | 386 | 386 | 386 | 386 | 386 |
| Practice of Mobile Banking | Pearson Correlation | .304** | .300** | .316** | .384** | 1 |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | |
| | N | 386 | 386 | 386 | 386 | 386 |

**. Correlation is significant at the 0.01 level (2-tailed).
(Source: Own Survey Result, 2021)

Similarly, as per Pearson correlation any score from + 0.5 to +1 indicates a very strong positive correlation which means that they both increase at the same time, any score from -0.5 to -1 indicates strong negative correlation which means that as one variable increase the other decrease proportionally and the score of 0 indicate that there is no correlation, or relationship between the two variables. According to M.M Mukaka, et al, 2009 correlation coefficient of zero indicates that no linear relationship exists between two continuous variables, and a correlation coefficient of -1 or +1 indicates a perfect linear relationship. The strength of relationship can be anywhere between -1 and +1. The stronger the correlation, the closer the correlation coefficient comes to ±1. Therefore, this output give us a correlation matrix for four correlation requested above table 4.11 shows that result four unique correlation coefficient there is a positive correlation coefficient number the variables are directly related.

The results for individual variable differ from the study conducted by Lee (2009) in the sense that he discovered significant relation between practice of mobile banking and perceived risk (time risk, social risk and financial risk) whereas no relationship has been found between trust and practice of

mobile banking. On the contrary, this paper explored the positive relationship between trust and the practice of mobile banking.

Relative advantage was found to be significant in determining the intention to use mobile banking. The results were consistent with Pikkarainen et al. (2004) and Venkatesh and Davis (2000). Practically, users are more likely to practice mobile banking if they believe using mobile banking will gain more relative advantages as compared to other traditional banking channels such as ATM or non-mobile internet banking. Hence, banks should emphasize the benefits that they can offer through this alternative banking channel. Therefore, the more relative advantage perceived by users, the higher possibility consumer will be attracted to adopt mobile banking.

### 4.4.5. Regression Analysis

The regression analysis was conducted to know by how much the independent variable explains the dependent variable. Therefore, regression analysis of perceived risk trust, convenience, relative advantage and practice of mobile banking was conducted, and the results of the regression analysis are presented as following:

Table 4.12: Model Summary [b] result of predictor variable over the dependent variable

**Model Summary [b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .911[a] | .862 | .858 | .13590 |

a. Predictors: (Constant), Perceived Risk Trust, Convenience, Relative Advantage.

b. Dependent Variable: Practice of Mobile Banking

(Source: Own Survey Result, 2021)

Table 4.12 above show that amount for r = 0.911 which explains a strong positive relationship between predictors and practice of mobile banking. It means that the relationship between perceived risk trust, convenience, relative advantage in Commercial Bank of Ethiopia is very strong, and by increasing the quality of one the other one will increase as well. Further, from the $R^2$ result in the summary table above it is safe to say that practice of mobile banking is about 86.2 % dependent over perceived risk trust, convenience, relative advantage.

Table 4.13: Analysis of Variance (ANOVA[a]) result of predictor variable over the dependent variable

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 87.856 | 4 | 21.964 | 260.401 | .000[b] |
| | Residual | 11.555 | 381 | .084 | | |
| | Total | 99.411 | 385 | | | |

a. Dependent Variable: Practice of Mobile Banking

b. Predictors: (Constant), Perceived Risk Trust, Convenience, Relative Advantage.

(Source: Own Survey Result, 2021)

Table 4.13 above indicates that in the regression model the independent variables perceived risk trust, convenience, relative advantage significantly predicts the dependent variable practice of mobile banking ($\boldsymbol{p} < 0.05$). Here, $\boldsymbol{p} < 0.0005$, which is less than 0.05, and indicates that, all independent variables statistically significantly predicts practice of mobile banking had a good fit with the data. The significance of the practice of mobile banking for each independent variable indicates the overall factors predicting Commercial Bank of Ethiopia. This is in line with other findings Onyebuchi, B., et al. (2016) but differ on user intention and user attitude having insignificant relationships.

Table 4.14: Coefficients[a] of Regression Variables

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 2.221 | .196 | | 11.307 | .000 |
| | Perceived Risk | .021 | .055 | .921 | 3.382 | .001 |
| | Trust | .033 | .059 | .640 | 4.551 | .000 |
| | Convenience | .868 | .064 | .691 | 2.142 | .002 |
| | Relative Advantage | .325 | .060 | .437 | 5.457 | .000 |

a. Dependent Variable: Average of Practice of Mobile Banking

(Source: Own Survey Result, 2021)

The most influencing factor is the convenience as represented by perceived usefulness and perceived ease of use and trust which has positive impact on the practice of mobile banking

# Chapter Five

# 5. Summary, Conclusions and Recommendations

## 5.1. Summary

The major purpose of the study was to assess the factors that influence the practice of mobile banking. In the review of literature, the researcher explored the basic constructs of the study: perceived risk, trust, convenience, relative advantage, and practice of mobile banking in general and their specific components. The review further identified relevant variables to examine in relation to the Commercial Bank of Ethiopia. This review generated five research questions, which were subsequently tested in the pilot and final studies.

In the main study, the researcher described the major factors that influence the practice of mobile banking and other demographic variables by using adequately valid and reliable instruments. Four approaches were used in this chapter to answer the research questions. First, the descriptive statistics were applied to the demographic variables as a means of describing the respondents and to determine the factors that influence the practice of mobile banking. The descriptive statistics suggested that the mean value is almost very sight higher than the middle value and the researcher can observe that though majority of them were at the high level still it is not satisfactory. Second, Correlation analysis procedures were applied to the data to examine relationships among the variables within the contexts of Commercial Bank of Ethiopia. The correlational analysis suggested that there is a positive relationship between independent variable (perceived risk, trust, convenience, relative advantage) significantly predicts the practice of mobile banking. Third, Linear regression analysis was used to examine the predictive power of factors that influence the practice of mobile banking and to find out the amount of variance of the independent variables accounted by dependent variables. In this regard, factors that influence the practice of mobile banking was found to contribute significantly predicts to practice of mobile banking.

Regarding the extent to which role of factors that influence the practice of mobile banking, statistically significant relationships were found between the two variables. The amount of variance accounted by independent variable (perceived risk, trust, convenience, relative advantage) significantly predicts the factors that influence the practice of mobile banking and the variables are normally distributed.

As far as the variation in practice of mobile banking based on perceived risk, trust, convenience, relative advantage was concerned, analysis of variance (ANOVA) indicted that there is a significant difference of practice of mobile banking across independent variables.

## 5.2. Conclusion

In conclusion, the paper aims to investigate the factors that influence the practice of mobile banking in Commercial Bank of Ethiopia. The findings of this study revealed that perceived risk, trust, convenience, relative advantage were the factors affecting the behavioral intention of mobile users to practice mobile banking services in Ethiopia. Meanwhile, trust, convenience, relative advantage were the factor found to be insignificant in this study.

This study would have provided with better applications if it were not limited within the city branches of the banks among the people having age range of 20 to 39 years as including people of different age group both from town and villages may provide better results. Moreover, inclusion of factor like cultural orientation of the user of banking service might have important influence on the use of mobile banking which is not incorporated in this study. Still, it can be concluded that the mobile banking service providers which are willing to provide useful and cost-effective products stand to gain substantial market share.

The result of correlation between dependent and independent variables shows, there is a positive correlation. They revealed that, there is a significant positive relationship between use of mobile banking services and perceived risk, trust, convenience, and relative advantage when the correlation output is put to 0.01 level two-tailed test. Furthermore, the results of the regression analysis revealed that Perceived risk ($r=.304^{**}$ $p<0.01$), Trust ($r=.300^{**}$ $p<0.01$), convenience ($r=.316^{**}$ $p<0.01$), and relative advantage ($r=.384^{**}$ $p<0.01$) of mobile banking services have a significant relationship with actual system use. In the model summary of the regression test (R Square = 0.911); therefore, the independent variables, trust, convenience, relative advantage for 91% of the variance in the mobile banking usage. This means that the independent variables in the trust, convenience, relative advantage 91% of the factors that determine the practice of mobile banking. In order to increase the practice of mobile banking services in Ethiopia, perceived risk, trust, convenience, relative advantage of the services must be increased. The regression results showed that the independent variables in the trust, convenience, relative advantage predict 91% of the factors that determine the practice of mobile banking.

Therefore, the conclusion of this study are that practice of mobile banking meet the expectations of the trust, convenience, relative advantage. Thus, this research has provided valuable knowledge and information to banks, service developers, and software engineers to enhance consumers' intention to practice mobile banking services in future.

## 5.3. Recommendation

The executives should clearly understand the factors that influence the practice of mobile banking in Commercial Bank of Ethiopia. In view of the research findings as well as one of the purposes of this work, the researcher made the following recommendations on the ways to improve practice of mobile banking at Commercial Bank of Ethiopia:

- Commercial banks and providers of mobile banking services need to promote the factors that affect the practice and use of mobile banking services in Ethiopia as identified in the study by working more on banking transactions speed and user-friendly platform.
- Commercial banks, financial institutions and the providers of digital financial services should create awareness of the benefits of mobile banking services that include: financial inclusion, easy access to mobile banking services and convenience in performing transactions.
- In order to increase the adoption and use of mobile banking services commercial banks should provide information on how to access and use the services. If potential users of the services are given the knowledge on how to register and use the services, it becomes easier for them to use services and go on to practice them.
- Customized international practice of mobile banking measuring standard has to be prepared by the Commercial Bank of Ethiopia and the service mobile banking level and customers' satisfaction should be measured periodically. Then based on the result corrective actions should be taken so as to improve the quality of the mobile banking service.
- The present study should be replicated with larger and nationwide samples of all staff and stakeholder to confirm whether the result could be generalizable beyond the limitations of the present samples.
- Above all, the bank managements should provide necessary facilities, and take actions that provide for the well-being of the employee to improve organizational performance on mobile banking service by enhancing cultural orientation.

## REFERENCE


Agwu, E. (2013). Generations X and Y's Adoption of Internet and Internet Banking in Nigeria. *International Journal of Online Marketing*, *2*(4), 68–82. https://doi.org/10.4018/ijom.2012100105

Akturan, U., & Tezcan, N. (2012). Mobile banking adoption of the youth market: Perceptions and intentions. *Marketing Intelligence and Planning*, *30*(4), 444–459. https://doi.org/10.1108/02634501211231928

AL-Akhras, M. T., Al-Sayyed, R., Alian, M., & Qwasmi, D. (2010). Innovative Secure Mobile Banking Services. *International Journal of Interactive Mobile Technologies (IJIM)*, *5*(1), 12. https://doi.org/10.3991/ijim.v5i1.1516

Al-Jabri, brahim M., & Sohail, M. S. (2012). Mobile banking adoption: Application of diffusion of innovation theory. *Journal of Electronic Commerce Research*, *13*(4), 379–391.

Amanyehun, R. (2011). Mobile Commerce First from Dashen, Addis Fortune News. *Http//:Www.Addisfortune.Com/Archive/2011 /January/Week4/*.

Awino. (2011). Business research methods 3rd Edition Oxford. *Oxford University Press*.

Bhattacherjee, A. (2002). Individual trust in online firms: Scale development and initial test. *Journal of Management Information Systems*, *19*(1), 211–241. https://doi.org/10.1080/07421222.2002.11045715

Carlos Tam, T. O. (2015). *Literature review of mobile banking and individual performance Abstract*.

Chavidi, N., & Mulabagula, G. (2004). Barriers to mobile Internet Banking services adoption: an empirical study in Klang valley of Malaysia. *The Internet Business Review*, *1*.

Crossman, B., & Crossman, J. (2011). Conceptualising followership - a review of the literature. *Leadership*, *7*(4), 481–497. https://doi.org/10.1177/1742715011416891

Cruz, P., Neto, L. B. F., Muñoz-Gallego, P., & Laukkanen, T. (2010). Mobile banking rollout in emerging markets: Evidence from Brazil. *International Journal of Bank Marketing*, *28*(5), 342–371. https://doi.org/10.1108/02652321011064881

Delgado, H. & Nieto, T. . (2004). Factors Underlying Attitude Formation Towards Online Banking in Finland. *International Journal of Bank Marketing*, *20*(6), 261–272.

Dineshwar, R., & Steven, M. (2013). An Investigation on Mobile Banking Adoption and Usage: A Case Study of Mauritius. *Proceedings of 3rd Asia-Pacific Business Research Conference, February*, 1–21.

Ellen, P. S., Bearden, W. O., & Sharma, S. (1991). Resistance to technological innovations: an examination of the role of self-efficacy and performance satisfaction. *Journal of the Academy of Marketing Science*, *19*(4), 297–307.

Gardachew, W. (2010). Electronic-Banking in Ethiopia- Practices, Opportunities and Challenges. *Journal of Internet Banking and Commerce*, *15*(2).

Hoehle, H., & Huff, S. L. (2012). Advancing Task-Technology Fit Theory: A formative

measurement approach to determining task-channel fit for electronic banking channels. *ANU Press, Canberra*, 133–170.

Ivatury G., & Mas I. (2008). The early experience with branchless banking. *CGAP Focus Note*, *2006*, 1–16. http://ssrn.com/abstract=1655257

Kabir, M. R. (2013). Factors Influencing the Usage of Mobile Banking : Incident from a Developing Country Kabir. *World Review of Business Research*, *3*(3), 96–114.

Karnani, A. G. (2011). Romanticizing the Poor Harms the Poor. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1008333

Kim, G., Shin, B., & Lee, H. G. (2009). Understanding dynamics between initial trust and usage intentions of mobile banking. *Information Systems Journal*, *19*(3), 283–311. https://doi.org/10.1111/j.1365-2575.2007.00269.x

Kothari, C. R. (2004). Research Methodology: Methods and Techniques. 2nd Edition,. *New Age International Publishers, New Delhi*.

Laforet, S.& Li, X. (2025). Consumers Attitudes towards Online and Mobile Banking in China. *International Journal of Bank Marketing*, *23*, 362–380.

Lee, K. C., & Chung, N. (2009). Understanding factors affecting trust in and satisfaction with mobile banking in Korea: A modified DeLone and McLean's model perspective. *Interacting with Computers*, *21*(5–6), 385–392. https://doi.org/10.1016/j.intcom.2009.06.004

Lifen Zhao, A., Koenig-Lewis, N., Hanmer-Lloyd, S., & Ward, P. (2010). Adoption of internet banking services in China: Is it all about trust? *International Journal of Bank Marketing*, *28*(1), 7–26. https://doi.org/10.1108/02652321011013562

Luarn, P., & Lin, H. H. (2005). Toward an understanding of the behavioral intention to use mobile banking. *Computers in Human Behavior*, *21*(6), 873–891. https://doi.org/10.1016/j.chb.2004.03.003

Luo, X., Li, H., Zhang, J., & Shim, J. P. (2010). Examining multi-dimensional trust and multi-faceted risk in initial acceptance of emerging technologies: An empirical study of mobile banking services. *Decision Support Systems*, *49*(2), 222–234. https://doi.org/10.1016/j.dss.2010.02.008

Mattila, M., Pento, T., & Karjaluoto, H. (2003). Internet banking adoption among mature customers: Early majority or laggards? *Journal of Services Marketing*, *17*(5), 514–528. https://doi.org/10.1108/08876040310486294

Mohamed K. & Kathy, N. (2008). Drivers For Transactional B2C M-Commerce Adoption: Extended Theory of Planned Behavior. *Journal of Computer Information Systems*.

Morrow-Howell, N. (1994). Multicollinearity in multiple regression. *Social Work Research*, *18*(4), 247–251.

Munnukka, J. (2005). Dynamics of price sensitivity among mobile service customers. *Journal of Product and Brand Management*, *14*(1), 65–73. https://doi.org/10.1108/10610420510583761

Muñoz-Leiva, F., Climent-Climent, S., & Liébana-Cabanillas, F. (2017). Determinantes de la intención de uso de las aplicaciones de banca para móviles: una extensión del modelo TAM

clásico. *Spanish Journal of Marketing - ESIC*, *21*(1), 25–38. https://doi.org/10.1016/j.sjme.2016.12.001

Omwansa, T. K. (2009). *M-PESA: Progress and prospects*.

Onyebuchi, B., et al . (2016). Mobile Banking—Adoption and Challenges in Nigeria. *International Journal of Innovative Social Sciences and Humanities Research*, *4*, 17–27.

Onyebuchi, B., et al. (2016). Mobile Banking—Adoption and Challenges in Nigeria. *International Journal of Innovative Social Sciences and Humanities Research*, *4*, 17–27.

Pedersen, P. E., Methlie, L. B., & Thorbjørnsen, H. (2002). Understanding mobile commerce end-user adoption: A triangulation perspective and suggestions for an exploratory service evaluation framework. *Proceedings of the Annual Hawaii International Conference on System Sciences*, *2002-Janua*(August), 8–15. https://doi.org/10.1109/HICSS.2002.994011

Püschel, J., Mazzon, J. A., & Hernandez, J. M. C. (2010). Mobile banking: Proposition of an integrated adoption intention framework. *International Journal of Bank Marketing*, *28*(5), 389–409. https://doi.org/10.1108/02652321011064908

Ram, S., & Sheth, J. N. (1989). Consumer resistance to innovations: The marketing problem and its solutions. *Journal of Consumer Marketing*, *6*(2), 5. https://doi.org/10.1108/EUM0000000002542

Reijswoud, V. (2007). Mobile Banking an African Perspective. *Asian Media and Information Center, India*.

Renju, C. (2014). Pros and cons of mobile check deposit. *International Journal of Scientific and Research Publications*, *4*(10), 1–5. https://www.consumerreports.org/cro/magazine/2014/10/pros-and-cons-of-mobile-check-deposit/index.htm

Riquelme, H. E., & Rios, R. E. (2010). The moderating effect of gender in the adoption of mobile banking. *International Journal of Bank Marketing*, *28*(5), 328–341. https://doi.org/10.1108/02652321011064872

Saleem, Z., & Rashid, K. (2011). Relationship between Customer Satisfaction and Mobile Banking Adoption in Pakistan. *International Journal Trade, Economics and Finance*, 537–543.

Soneka, P. N., & Phiri, J. (2019). A Model for Improving E-Tax Systems Adoption in Rural Zambia Based on the TAM Model. *Open Journal of Business and Management*, *07*(02), 908–918. https://doi.org/10.4236/ojbm.2019.72062

Srite, M., & Karahanna, E. (2006). The role of espoused national cultural values in technology acceptance. *MIS Quarterly*, 679–704.

Sultana, R. (2009). Mobile Banking: Overview of Regulatory Frame Work in Emerging Market. *World Journal of Information Technology*, *4*(1), 124–131.

Sumanjeet. (2010). The state of e-commerce laws in India: a review of Information Technology Act. *International Journal of Law and Management*, *52*(4), 265–282.

Sunil, K. and Durga, P. (2013). Mobile Banking Adoption and Benefits towards Customers Service. *Modern Engineering Management Studies (MEMS)*, *2*(1), 2319–2526.

Suoranta, M., & Mattila, M. (2004). Mobile banking and consumer behaviour: New insights into the diffusion pattern. *Journal of Financial Services Marketing*, *8*(4), 354–366. https://doi.org/10.1057/palgrave.fsm.4770132

Tam, C. & Oliveria, T. (2017). Literature Review of Mobile Banking and Individual Performance. *International Journal of Marketing*, *35*, 1041–1065. https://doi.org/10.1108/IJBM-09-2015-0143

Teo, T., Ursavaş, Ö. F., & Bahçekapili, E. (2011). Efficiency of the technology acceptance model to explain pre-service teachers' intention to use technology: A Turkish study. *Campus-Wide Information Systems*, *28*(2), 93–101. https://doi.org/10.1108/10650741111117798

Tiwari, R., & Buse, S. (2007). The Mobile Commerce Prospects: A Strategic Analysis of Opportunities in the Banking Sector. *Hamburg University Press*, *May 2014*, 1–236. https://tubdok.tub.tuhh.de/bitstream/11420/271/1/HamburgUP_Tiwari_Commerce.pdf

Vinayagamoorthy, A. and Sankar, C. (2012). *Mobile Banking –An Overview', Advances in Management*. *5*, 24–29.

Wessels, L., & Drennan, J. (2010). An investigation of consumer acceptance of M-banking. *International Journal of Bank Marketing*, *28*(7), 547–568. https://doi.org/10.1108/02652321011085194

Wu, J., & Wang, S. (2005). *What drives mobile commerce ? An empirical evaluation of the revised technology acceptance model*. *42*, 719–729. https://doi.org/10.1016/j.im.2004.07.001

## Annex- Questionnaire for Data Collection

**Informed consent for the respondents**

**Introduction:**

My name is _____, I am working as data collector in a survey conducted by Tsion Belay, to find out factors influencing the practice of mobile banking in the case of Commercial Bank of Ethiopia, Kirkos District, Addis Ababa. The purpose of the study is to generate information necessary for the planning of appropriate interventions and to truck the trend on behaviors that are associated with Mobile Banking.

Therefore, your honest and genuine participation by responding to the questions prepared is highly appreciated and credited in campaigns for improvement of mobile banking. If you are not interested to be part of the study please tell me genuinely, and end the session.

I would like to assure you that your answers are completely confidential. Your name will not be written on this form, and will never be used in connection with any of the information you tell me. You do not have to answer any questions that you do not want to answer, and you may end this interview at any time you want to. However, your honest answers to these questions will help us better understand what people think, say and do about certain kinds of behaviors. I would greatly appreciate your help in responding to this survey. The survey will take about 20-30 minutes to fill the questions.

Would you be willing to participate?"

If yes proceed to next part

Thank you for your cooperation

## Section 1: Demographic Information

**DIRECTIONS:** Circle on the following Demographic Information

1) Age
   a) 20 – 24 Years
   b) 25 – 29 Years
   c) 30 – 34 Years
   d) 35 – 39 Years
2) Gender
   a) Male  b) Female
3) Years of Schooling of the Respondents
   a) Below 10 Years
   b) 10 – 12 Years
   c) 13 – 15 Years
   d) Above 15 Years
4) How many years you have used the mobile banking of Commercial Bank of Ethiopia
   a) Less than 1 Year
   b) 1 – 3 Years
   c) 3 – 5 Years
   d) Above 5 year

## Section 2: Respondent's Opinion about the Usage of Mobile Banking

**DIRECTION:** When do you agree or disagree with the following statements?

Strongly Agree = 5  Agree = 4  Neutral = 3  Disagree = 2  Strongly disagree = 1

| S.N | Perceived Risk | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1 | Mobile banking services may not perform well because of network problems. | | | | | |
| 2 | Mobile banking services may not perform well and process payments incorrectly. | | | | | |
| 3 | The users' friends, family and colleagues would think less of them in case of any wrong in transactions through mobile banking. | | | | | |
| 4 | Usage of mobile banking leads to time fixing payments errors. | | | | | |
| 5 | Due to poor network of mobile in some areas may take a lot of time to do transactions through mobile banking. | | | | | |
| 6 | Providing personal privacy information over mobile banking may not be safe | | | | | |
| 7 | There is a fear of using mobile banking that other people may access my account through hacking or other means. | | | | | |
| 8 | When transferring money through mobile banking, the users afraid that they will lose money due to careless and mistakes . | | | | | |
| 9 | Due to transactions errors there might be loss of money | | | | | |

| S.N | Trust | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1 | Ability of the service provider has important influence in choosing mobile banking service | | | | | |
| 2 | The mobile banking service provider has the ability to provide mobile banking service | | | | | |
| 3 | The service providers' ability to mobile banking service is similar to its ability to provide traditional banking service | | | | | |
| 1 | Kindness of the service provider has important influence in choosing mobile banking service | | | | | |
| 2 | The mobile Banking service providers in CBE tend to provide benevolent service. | | | | | |
| 6 | Integrity of the service provider has important influence in choosing mobile banking service. | | | | | |
| 7 | Integrity of the service provider will make the mobile banking a better option than the traditional banking. | | | | | |
| 8 | The mobile Banking service providers in CBE tend to provide integral service | | | | | |
| **Convenience** | | | | | | |
| 1 | Using mobile banking would enable the users to accomplish tasks more quickly. | | | | | |
| 2 | Using mobile banking would make it easier for the users to carry out tasks. | | | | | |
| 3 | Mobile banking is useful. | | | | | |
| 4 | Overall, using mobile banking is advantageous. | | | | | |
| 5 | Learning to use mobile banking would be easy. | | | | | |
| 6 | Interaction with mobile banking does not require a lot of mental effort. | | | | | |
| 7 | It is easy to use mobile banking to accomplish banking tasks. | | | | | |
| 8 | The usage of mobile banking is easier than the traditional banking. | | | | | |
| **Relative Advantage** | | | | | | |
| 1 | The mobile banking service providers in CBE need to bear heavy cost to purchase equipment for such service. | | | | | |
| 2 | The mobile banking access cost is expensive to use. | | | | | |
| 3 | The mobile banking transaction fee is expensive. | | | | | |
| 4 | It takes much time to learn about the use of mobile banking | | | | | |
| 5 | The usage of mobile banking service enables to get banking service quickly | | | | | |
| 6 | Mobile banking is faster than traditional banking | | | | | |

| S.N | Practice of Mobile Banking | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1 | Using mobile banking enables me to do my banking transactions quicker as it is convenient and easiest for me to use. | | | | | |
| 2 | Mobile banking service is not complex, so it doesn't take me time to learn how to use it. | | | | | |
| 3 | By using mobile banking, I can access my fund any time I want to. | | | | | |
| 4 | Mobile banking is faster than visiting a bank or using phone banking | | | | | |
| 5 | I find mobile banking useful for my banking needs | | | | | |
| 6 | Reduction of queues in banking halls due to anywhere anytime service | | | | | |