Factors Affecting Mobile Banking Usage: A Study on Commercial Bank of Ethiopia, Jimma Town

A Thesis Submitted to the School of Graduate Studies of Jimma University in Partial Fulfillment of the Requirements for the Award of the Degree of Master of Business Administration (MBA)

By

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JIMMA UNIVERSITY

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CERTIFICATE

This is to certify that the thesis entitles "*Factors Affecting Usage of Mobile banking***:** *A Study on Commercial Bank of Ethiopia",* submitted to Jimma University for the award of the Degree of Master of Business Administration (MBA) and is a record of genuine research work carried out by Mr. *Asresahegn Befekadu* under our guidance and supervision.

Therefore, we hereby declare that no part of this thesis has been submitted to any other university or institutions for the award of any degree or diploma.

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DECLARATION

I hereby declare that this thesis entitled "*Factors Affecting Usage of Mobile Banking: A study on Commercial Banking of Ethiopia, Jimma town",* has been carried out by me under the guidance and supervision of Asst. Professor Wubshet Mengesha and Miss Tigist Waktole.

The thesis is original and has not been submitted for the award of any degree or diploma to any university or institutions.

Researcher's Name	Date	Signature
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Abstract

This research is aimed to assess factors affecting mobile banking usage in commercial banking of Ethiopia in Jimma Town. The initiation to this title emanated from very slow digital banking usage rate in Ethiopia as compared to the government interest and banks strategy to shift to digital banking system. Hence, this research assessed factors affecting the usage rate of mobile banking. In assessing the research, the researcher designed to use explanatory research method in combination with quantitative approach. The required information is mainly gathered from commercial bank of Ethiopia mobile banking customers; and supported by bank employees' response using questionnaire and structured interview. To select the respondents, systematic and purposive sampling methods were used to collect primary information. The data obtained from the study was entered into the computer and statistically analyzed using descriptive analysis, reliability analysis and multiple regression analysis. Accordingly, the study concluded that complexity, lack of awareness, trust issues, compatibility, network interruption and security issues have direct effect on usage of mobile banking in which the bank is mainly recommended to manage those factors by adopting necessary technology; formulating legal structures, empowering man power, and improving network capability and accessibility.

Key Words: *Mobile banking Usage, Complexity, Awareness, Trust, Compatibility, Network Interruption, Security Risk, ICT, TAM, DIT*

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Acronyms

- **ATM-** Automatic Teller Machines
- **CBE-**Commercial Bank of Ethiopia
- **DIT**-Diffusion Innovation Theory
- **GSM-**Global System for Mobile Communications
- **ICT-** Information Communication Technology
- **MB-**Mobile Banking
- **NBE-**National Bank of Ethiopia
- **PEOU-**Perceived Ease of Use
- **PU**-Perceived Usefulness
- **SMS**-Short message Service
- **TAM-** Technology Acceptance Model
- **USSD**-Unstructured Supplementary Service Data
- **UTAUT-** Unified Theory of Acceptance and Use of Technology

CHAPTER ONE

1. INTRODUCTION

This research is aimed to investigate factors affecting usage of mobile banking usage in commercial bank of Ethiopia, Jimma town. It focuses on the extent to which complexity, awareness, trust, compatibility, network and security issues affect mobile banking usage rate. Hence, this chapter deals about introducing importance, nature and features of mobile banking. It also contains introduction of commercial bank of Ethiopia under background of the study area. The major part of this study is statement of the problem which identified and defined the research problem in which the researcher indicated what to solve and what questions planned to be answered. The chapter also introduced objectives; significance and scope of the study.

1.1. Background of the Study

In current business environment, banking institutions have become important elements in economic growth inventions of electronic banking have changed the business of banking as fast as quickly. Banks are reorganizing their business strategies towards new opportunities offered by electronic banking. E-banking has brought new era to banks that led to broader strategy reformation to bring new possibilities. Electronic banking can be described as delivery of financial service and information banks to its customers, via electronic devices (Mohamed 2010 & Fulford, 2014). E-banking is a fully automatic service for traditionally banking customer's products based on information technology platforms. E-banking services provide customer access to accounts, the ability to move their money between different accounts or making payments via e-channels (Paun 2010).

According to (Tambely 2017), in recent years, technology has become increasingly important to the evolution of service delivery systems and the development of new electronic retail products. Technological innovations such as ATMs, agent banking, Internet banking, and smartcard applications are taking place at tremendously fast pace in the global banking industry in which

information technology has played significant role in reshaping directions of competition in the retail banking sector (Rezaul and Rahman 2010).

Firms that have adopted innovations to change their process and create new products that can attract customers as compared to their competitors have improved their performance (Kariuki 2005). As compared to banking industries in developed countries, Ethiopia's banking business culture is underdeveloped which require capacity building by adopting recent banking trends (Brihanu 2020).

Mobile banking has become a modern communication channel for serving bank customers in which majority of banks and other financial institutions have focused on. It is the use of mobile phones for banking and financial affairs. It is a service that will enable customers' information such as the bank account balance and information about account transactions through cell phone. This is done with high security. As usual banking services, mobile banking services that are offered through the mobile network factor has focused heavily on the issue could unique mobile services at reduce cost banking services (Tewolde 2019).

In order to encourage further mobile banking adoption in developing countries, a better understanding of the factors and variables impacting M-banking adoption is critical (Zhao et al. 2008). By gaining an in-depth understanding of the factors and conditions that influence the country's ability to realize increase in usage and realize benefits of mobile banking, strategic implications can be forwarded for the researchers and practitioners regarding how to promote the growth of M-banking in Jimma and in Ethiopian in general. However, despite the importance of these adoption studies in developing countries, limited studies are currently available in Jimma town in Ethiopia. The previous limited studies which are outdated mainly targeted in Addis Ababa in which customers' understanding, network capability and people's interest to adopt new technology is far better than Jimma. Therefore, more studies are still required to understand the relevance of Mobile banking to identify areas in which the country lags behind that inhibits their Mobile-banking adoption and growth. Therefore, to address the current gap in the literature; this study is designed to assess factors affecting Mobile banking usage rate in Jimma town which will give insights to understand the factors in Jimma context which will represent other towns in the same standard. .

1.2. Back ground of the Organization

Commercial Bank of Ethiopia (CBE) was established in 1942 in which it legally established as a share company in 1963. Ethiopian government merged Addis Bank into the Commercial Bank of Ethiopia in 1980 to make CBE the sole commercial bank in the country (The bank's website). The Commercial Bank of Ethiopia (CBE) is the largest commercial bank in Ethiopia. As of June 2020, it had about 500 billion Birr in assets and held approximately 67% of deposits and about 53% of all bank loans in the country. The bank has around 34000 employees, who staff its headquarters and its over 1450+ branches positioned in the main cities and regional towns. It has been working as back bone in a country and acts as good facilitator for financial institutions (Hayat 2017 & Tigist 2019).

Financial institutions play vital role for the development and progress of country's economy in which CBE is the major role player (Abel 2019). The bank is pioneer to introduce modern banking to Ethiopia and credited for playing a catalytic role in the economic progress and development of the country. Recently, it has established digital banking department and working on electronic payments such as ATM, mobile banking, Internet banking, POS, and CBE Birr. Commercial bank of Ethiopia, Jimma District is located in Jimma town that is one of the thirty districts of which fifteen recently established (CBE Portal 2019).

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give insights to understand the factors in Jimma context which will represent other towns in the same standard. .

1.3. Statement of the Problem

Today's globalized and dynamic business environment has been forcing many businesses to face increased intensive competition. The competitive business environment and rapid technological change is the key to sustainable competitive advantage in delivering high quality services that will in turn result in satisfied customers (Boshoff 2009).

Agrawal and Jain (2013) state that while banks are striving to strengthen customer relationship and move towards customer based service delivery in which customers are increasingly moving away from the restrictions of traditional branch banking and seeking the convenience of electronic banking. Almost all of Ethiopian banks have given substantial focus in the provision of e-banking services for their customers as similar trend has been seen in the world. Usage of Mobile banking services will enable banks to realize returns on their investment while providing them with a competitive advantage. However, the rapid adoption of M-banking services is still in question. Available Ethiopian studies emphasize that retail banks are facing significant challenges in migrating customers from over the counter services to e-banking services, (Brikty 2017).

Banking sector in worldwide exerts huge efforts to provide their customers with a satisfied level of mobile banking services, but despite the widespread adoption of mobile devices, such as smart phones and tablets, the usage rate of M-Banking is still low because of many reason or barriers that affect the usage of mobile banking (Hayat 2017). According to (Kalkidan 2016) Ethiopia's banking industry is very late in adopting banking technologies due to various factors and indicators as compared with the banking industry operated in developed country.

According to the bank's vision to be world class commercial bank by the year 2025, it expects the digital banking wing replaces the traditional one. Thus, the bank expects branch visiting customers reduce through time by conducting own transactions using available digital alternatives in which mobile banking is the main channel. Out of 2017/18 financial year 53894 registered and activated only less than 10% of the registered customers transacted at least once after first activation (Jimma District, Annual Report). The trend doesn't still show significant progress in which 2018/19

financial year report still shows less than 10% in making mobile banking for their day to day transactions. Studying the influence that affecting not to increase the transaction gives the bank to reconsider various strategies for future improvement. Furthermore, due to e-payment current importance in Ethiopia for various reasons like economic and political environment, conducting the bottlenecks affecting e-banking growth, particularly mobile banking plays vital role.

However, very little researches have been conducted in Ethiopia regarding mobile banking usage rate. While referring for previous research on the issue, main prominent researchers recently conducted related research in Addis Abeba. A study made by Brikty (2017) studied about barriers to adoption of mobile banking; Elfagid (2015) also focused on challenges and prospects of mobile and agent banking while Hayat (2017) studied about mobile banking adoption in Ethiopia. Furthermore, Henokarega (2015) on his side studied about financial inclusion through mobile banking while Serkalem, Mekuanint, Timbula and Tadele (2018) also made group research on factors affecting the adoption of mobile banking United Bank in Addis Ababa City Customers. These researchers have focused on adoption of mobile banking which studied about acceptance of the channel while this research focuses on usage rate which assesses effect of major variables in number of transactions to be made by mobile banking. Those researches conducted in Ethiopia have shown little to show effect of variables affecting the usage rate and most of them are outdated. Majority of the studies focused in Addis Ababa which might not represent trends in all geographic locations in Ethiopia and this research studies those variables that mainly direct relationship with usage of mobile banking in Jimma town. Thus, this research aimed to fill previous gaps of representation, timing, and sample differences have necessitated further investigations. Hence, this research contributes for banking industry as it pinpointed major variables that affect mobile banking adoption and usage. While conducting the study, the following basic questions were expected to be answered:

Research Question

1. To what extent does complexity affects mobile banking usage in CBE in Jimma, Ethiopia?
2. To what extent does low level of awareness affects mobile banking usage in CBE Jimma, Ethiopia?
3. To what extent does trust on the system affects mobile banking usage in CBE in Jimma, Ethiopia?
4. To what extent does compatibility affects mobile banking usage in CBE in Jimma, Ethiopia?

5. To what extent does network interruption affects mobile banking usage in CBE Jimma, Ethiopia?
6. To what extent does fear of risk affect mobile banking usage in CBE in Jimma, Ethiopia?

1.3. Objectives of the Study

1.3.1. General Objective

The general objective of the study is to investigate the factors affecting usage of mobile banking in CBE in Jimma town.

1.3.2. Specific Objectives

- To investigate the effect of complexity of mobile banking service in commercial bank of Ethiopia in Jimma town.
- To investigate the effect of customer's awareness on usage of mobile banking in commercial bank of Ethiopia in Jimma town.
- To investigate the effect of customers' trust on usage of mobile banking service in commercial bank of Ethiopia in Jimma town.
- To investigate the effect of compatibility on usage of mobile banking in commercial bank of Ethiopia in Jimma town.
- To investigate the effect of network interruption on usage of mobile banking in commercial bank of Ethiopia in Jimma town.
- To investigate the effect of security risk on usage of mobile banking in commercial bank of Ethiopia in Jimma town.

1.4. Research Hypothesis

The study was conducted based on set of technical attributes and how they influence mobile banking adoption and use. The study used diffusion of innovation as a base-line theory to investigate factors that affect mobile banking adoption and use. Thus, the following research hypothesis were derived from the specific objectives and tested in this study:

Cheung & Vogel (2000) defined complexity as the extent to which an innovation can be considered relatively difficult to understand and use. They found that complexity negatively influences the adoption of internet usage.

H1: Complexity of usage has a significant effect on low mobile banking usage.

Prashant, Tiwari & Gupta (2021) described awareness is an important factor in encouragement of consumers to adopt related self service facilities. Awareness has been shown to have a positive effect on Technology adoption in though mobile phones particularly mobile banking (Alkhaldi 2017).

H2: Lack of information has a significant effect on low mobile banking usage.

According to (Flore 2006), trust is defined as "a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another".

Trust is important because it helps customers overcome perceptions of uncertainty and risk and helps build appropriate favorable expectations of performance and other desired benefits. In any business or commerce deal trust is an important element.

H3: Trust on the service has a significant effect on low mobile banking usage.

Compatibility refers to the degree to which a service is perceived as consistent with users' existing values, beliefs, habits and present and previous experiences (Chen et al. 2004). Compatibility is a vital feature of innovation as conformance with user's lifestyle can drive a rapid rate of adoption (Sahin 2006).

H5: Compatibility has a significant effect on low mobile banking usage.

According to Lisanework & Pasha (2017), since mobile banking applications needs internet service, the availability and level of internet is the basic factor that determines the service quality of adopting the service.

H4: Network interruption has a significant effect on low mobile banking usage.

Security risk refers to the degree of risks in using an innovation (Ram & Sheth 1989). Risk perception by customers usually arises due to the doubt related to the degree of inconsistency between customers' judgment and real behavior, and technology failing to deliver its anticipated outcome and its consequent loss.

H6: Security risk has a significant effect on low mobile banking usage.

1.5. Significance of the research

Among the existing literatures on mobile banking, it was discovered that not many studies have been conducted to evaluate if mobile banking is utilized by the customers in Ethiopia and factors affecting customer's usage of mobile banking. Therefore, this study tried to determine the factors that influence customer's usage of mobile banking in Jimma. The result of this study is believed to provide knowledge for improving the service. It can be meaningful for researchers for further investigation and banks' management to understand the factors influencing customer's plan ways to increase their usage rate. Therefore, the finding of the study is believed to inform bank managements by providing them with information on how to increase usage of mobile banking to increase profitability that will be obtained from delivering this service. The study can also pave the way for further and detail investigation for future researchers on mobile banking and digital banking.

1.6. Scope of the study

This research is delimited to factors affecting mobile banking usage in Jimma town. The researcher assessed the extent to which lack of complexity of the process, awareness, compatibility, and network interruption affect usage of mobile banking in commercial bank of Ethiopia in Jimma town. The variables are selected because of areas' less exposure to promotions, poor network infrastructure, customer hesitation to get the services they expect, fear of integrity and less understanding of usage manuals. The information was gathered from commercial bank of Ethiopia customers and employee in which the researcher believes the respondents' responses represented all mobile banking users in the bank. The study delimited to 2017/18 and 2018/19 financial year activities which may not represent the current status of mobile banking adoption and usage.

1.7. Organization of the study

The paper is organized under five chapters. The first chapter focuses on introduction of the research which involves background of the study, background of the organization, statement of the problem, objectives of the study, scope of the study and organization of the study. The second chapter is devoted to the review of related literature which includes theoretical literature that state important issues on mobile banking and what factors affect it. Empirical literature which is the second part of chapter two reviews previous conducted literatures on mobile banking adoption. Chapter three incorporated research design, sampling, and research analysis methods. Chapter four dealt about data interpretation, analysis, and discussion while the last chapter involved research implication, conclusion and recommendation.

CHAPTER TWO

2. LITERATURE REVIEW

2.1. Theoretical Literature

2.1.1. Electronic Banking

Growth of information and communication technology (ICT) is attracting all organizations in the world and Ethiopian banks as it play a crucial role in modern banking industry to create value for banks and customers, that it enables customers to perform banking transactions without visiting a on the counter banking system. Without doubt, level of ICT adoption is becoming one of the major competitive criteria in banking industry which decides their fate to be profitable and exit and business (Turban 2008). According to (Schofield & Kubin 2002), telecommunication industries have brought networked computers to networked mobile devices. The use of electronic banking is considerably increasing high with electronic banking in which users can now conveniently carry out banking transactions. However, this convenience cannot be achieved if the users do not have access to the internet. With mobile banking, on the other hand, convenience can be achieved 24hrs a day due to users' access to their mobile phone all times and with not necessitate to internet connection.

2.1.2. Concept of Mobile Banking

Mobile Banking refers to provision of banking and financial services with the help of mobile telecommunication devices. The scope of offered services may include facilities to conduct bank transactions, to administer accounts and to access customized information (Tiwari and Buse, 2007). In the broader sense, mobile banking enables the execution of financial services within an electronic procedure using mobile communication techniques in conjunction with mobile devices. Mobile banking is a service provided by a bank or other financial institution that allows its customers to conduct financial transactions remotely using a mobile device such as a smart phone or tablet. It is usually available on a 24-hour basis (Pousttchi and Schurig 2004). The term

M-Banking is used to denote the access to banking services and facilities offered by financial institutions such as account-based savings, payment transactions and other products by use of an electronic mobile device. Mobile banking has yielded a multiple effect on the number of solutions available to clients. This is in addition to more efficient transactional environment and the high substitution of banking points (Arun 2011).

2.1.3. Benefits of Mobile Banking

(Skinner 2011) listed the following Mobile Banking benefits to customers:

i. **Ease of access:** One of the primary benefits of Mobile Banking is that it has made it possible to minimize the typical challenges of accessing the account once the bank's branch closes for the day.

ii. **Convenience-**Mobile banking provides service without time bound and space as it can be accessed to electronic devices. Other people are not limited by time or space, access to electronic activities.

iii. **Customization -** Mobile phone is much higher influence than personal computers. Therefore, mobile commerce providers design more creative and customized lifestyle tool. For example, using demographic data collected by wireless service providers, and information on the current location of the mobile users can do more targeted advertising.

iv. **Identify ability -** Mobile phone provides support to secure mobile phone transactions where personal computers are almost unknown. One person always uses mobile devices and it ideals for Personal based target marketing, through the technology of Global Positioning System (GPS), service providers can recognize a user carefully .Personalize opportunity to deliver messages to different parts of space and time through sound and look.

v. **More-security-**Customer can get the reliability of the financial transactions once they log into their Mobile Banking app by using a multi-level authentication system that demands the user to go through a two or more pronged security set-up before managing the account. These include a primary password, progressing to a code that only possess or other biometric identification patterns that are unique to everybody, hence reducing risks of forgery.

vi. **Environment-friendly** -Mobile banking is an environmental friendly way of banking. It does away with the use of paper as every transaction is electronically controlled.

2.1.4. Mobile Banking in Ethiopian Banking Industry

Customers' grievances against manual system in Ethiopian banks have brought substantial improvement in Ethiopian banking industry. Prior to the introduction of technologies in financial sectors, there was only traditional payment system that had been applied in all banks for making payments (Kalkidan 2016). Electronic banking was introduced in 2011 by commercial bank of Ethiopia by introduction of ATM in which mobile banking adoption and usage is not well developed. Currently, all banks operating in Ethiopia have already adopted E-banking instruments such as ATMs, credit and debit cards, mobile/internet banking as well as agency banking (Mohamed 2014).

As stated in (Gardachew 2010), after introducing ATM, Commercial bank of Ethiopia expanded to mobile banking. 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. The previous Ethiopian banks manual banking systems have some degree of inefficiency in their business operations and performance, especially with regard to managing the quality of bank customer relationships, product and service marketing strategies (Birkity 2017).

2.1.5. Trends in Mobile Banking

The introduction of the internet has forced financial services to operate their business, empowering organizations with new business models and new ways to offer 24 hour accessibility to their customers. In the same way, after introduction of the ability to offer financial transactions online, it has also created new players in the financial services industry, such as online banks, online brokers and personalized services although its growth percentage is very low (Andrew 2009). Over the last few years, the mobile and wireless market has been one of the fastest growing markets in the world and is still growing at a rapid pace. Mobile banking will eventually allow users to make payments at the physical point of sale. Many believe that mobile users have just started to fully utilize the

data capabilities in their mobile phones. As stated by (Niina 2004), in Asian countries and in European countries, where mobile phone penetration is very high (at least 80% of consumers use a mobile phone), mobile banking is likely to appeal even more. This opens up huge markets for financial institutions interested in offering value added services. With mobile technology, banks can offer a wide range of services to their customers such as doing funds transfer, receiving online updates of stock price or even performing stock trading wherever the customer is located as long as mobile network is available (Chukwu 2014).

2.1.6. Adoption of Mobile Banking

Grace, (2014) defined adoption ability to accept a new technology and willing to use the service. Technology adoption is thus the process of beginning to use new technology or different technology by customers' and organizations. As this modern era, the growth of nations, organizations and individuals is highly dependent on extent to adopt the technology in their operations (Bekalu 2019). Customers are resisting using these technologically advanced services, partly because of lack of various variables. Mobile banking, which allows the user to perform financial transaction using a mobile device, is not an exception to resistance faced from consumers (Amola & Bhatt 2016). Most of the customers argue that internet and other technology based transaction is not safe, not practical and would lead to fraud, while some think safer, flexible in time and can be done anywhere and anytime (Kabir 2013).Thus, it is necessary to have an in depth analysis on usage of mobile banking service process to identify the factors influencing the usages of mobile banking. A clear understanding of these factors will enable mobile banking service providers to develop suitable marketing strategies, business models, processes, awareness programmes and pilot projects (Kabir 2013).

2.1.7. Factors affecting mobile Banking usage

2.1.7.1. Technology Acceptance Model (TAM)

TAM explains about the ability of customers to apply in a customer context where the acceptance and use of information technologies is not only to achieve tasks but also to fulfill the emotional needs may be limited (Taherdoost 2017). According to Davis (1985) an individual who has strong behavioral intention might use mobile banking without forming any attitude. (Davis 1989),

suggests that perceived usefulness (PU) and perceived ease of use (PEOU) are the two most important factors in explaining individual users' adoption intentions and actual usage. TAM has been extensively tested and validated and is a widely accepted model, which can be modified or extended using other theories or constructs (Mathieson et al 2001). TAM is a simple and practical theoretical model which appears to be the most widely accepted among information system researches (Luarn & Lin, 2005). It argues that the intention to use a particular technology is based on personal behavioral intention, which in turns is determined by perceived ease of use and perceived usefulness (Davis, 1989). Under TAM model, the research uses perceived ease of use as a variable.

Perceived Ease of Use (Complexity)

Cheung et al. (2012) in (Ibrahim & Sohail 2012) defined ease of use as the extent to which innovations can be considered relatively difficult to understand and use. It also is defined as the degree to which a person believes that using a particular system would be free of effort. Prior studies show that perceived ease of use has a significant effect on usage intention, either directly or indirectly through its effect on perceived usefulness (Venkatesh 2000). TAM points that perceived ease of use influence the innovation acceptance. It decrease the effort paid in learning and applying new technologies. Complexity is also defined in IDT by (Sahin2006) that Complexity is defined as the degree to which an innovation is perceived to easy to understand and use. Adoption will be less likely if the innovation is perceived as being complex or difficult to use as the degree to which an innovation is perceived to easy to understand and use. Adoption will be less likely if the innovation is perceived as being complex or difficult to use (Sahin2006). As mobile banking services have user friendly interfaces, users see them as easy to use, and hence to form positive attitudes towards them (Lin 2011). A system perceived to be easier to use will facilitate more system use and is more likely to be accepted by users (Venkatesh and Morris 2003). Complexity in use is a major factor in usage of mobile banking. There is considerable amount of empirical research on the mobile technology to suggest that users' intention to use mobile banking is inhibited by the perceived complexity of the innovation. Much of the extant literature on barriers of mobile banking usage is predominantly related to technical complexity (Alkhaldi 2017). Users will be inhibited to use

mobile banking if they find it requires more mental effort, is time consuming or frustrating. Therefore, it is hypothesized that perceived complexity inhibits usage of mobile banking.

2.1.7.2. The Unified Theory of Acceptance and Use of Technology (UTAUT) Model

According to Venkatesh et al. (2003) conducted a research on a unified information technology acceptance (UTAUT) mode and integrated significant elements across eight prominent user acceptance models and formulates a unique measure with core determinants of user behavioral intention and usage. In this model the original UTAUT aims to explain user intentions to use an IS and subsequent usage behavior. Furthermore UTAUT model suggests that there are a set of factors that influence the intention of the individual user acceptance (Mohammad, 2012). Venkatesh (2003) stated four constructs play a significant role as direct determinants of user acceptance and usage behavior namely performance expectancy, effort expectancy, social influence, and facilitating conditions.

Facilitating Conditions is one of the variables under (UTAUT). Facilitating conditions are defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system (Venkatesh et al., 2003). This definition captures concepts embodied by three different constructs: perceived behavioral control from (TAM), facilitating conditions from (MPCU), and compatibility from (IDT). This research incorporates network effect under facilitating conditions in Model of PC Utilization (MPCU).

Network Irruption

According to (Ahmad, 2018) internet usage efficacy is one of the recently studied variables under UTAUT in facilitating conditions that affects adoption and usage. (Lisanework & Pasha 2018) indicated that Mobile banking apps, one of the electronic banking, need internet services in which the availability and level of internet is the basic factor that determines the service quality of adopting e-banking services. As the result of the survey indicates, low level of internet penetration is one of the challenges for adopting and using mobile banking. In an online world, banks face many more challenges because of poor, or interrupted connectivity. Security, data storage and bandwidth allocation during peak times also pose a challenge. Mobile apps require and use a lot of

data, which is why some banks have even offered to cover data charges for customers using their online platforms. However, if the bank's telecommunications infrastructure is less than stable, or unable to withstand the data volumes generated by app users, banks and financial industries need to ensure their telecommunications providers are able to provide the speeds and bandwidth management to provide for peak use times, but also need to provide optimum security across all nodes of the network (Ebisa 2020).

2.1.7.3. Innovation Diffusion Theory (IDT)

According to (Sahin2006) diffusion theory is defined as the process in which an innovation is communicated thorough certain channels over time among the members of a social system. There are three characteristics of innovations which affect acceptance and use of new technology. These are relative advantage, compatibility, and complexity. Adopters have invariably been found to have different perceptions about these characteristics in comparison with non-adopters. According to (Kotler 2000), the characteristics of an innovation affect its rate of adoption. According to (Kotler 2000) when individuals pass through the innovation-decision process, they are motivated to seek information in order to decrease uncertainty about the relative advantage of an innovation. Potential adopters want to know the degree to which a new idea is better than an existing practice. Hence relative advantage is often the content of network messages with regard to an innovation. Relative advantage, in one sense, indicates the strength of the reward or punishment resulting from the adoption of an innovation. Under this theory, compatibility, perceived trust, perceived risk (Security) and awareness variables are incorporated.

Compatibility

According to innovation diffusion theory (IDT), Compatibility is defined as the degree to which an innovation is perceived as being consistent with the existing values, past experiences and the needs of potential adopters. An innovation can be compatible or incompatible with socio-cultural values and beliefs; with previously introduced ideas; or with client needs for innovations (Sahin 2006).The compatibility of an innovation, as perceived by members of a social system, is positively related to its rate of adoption. Compatibility is a vital feature of innovation as

conformance with user's lifestyle can propel a rapid rate of adoption (Sahin 2006). Study on compatibility is a significant antecedent in determining customers' attitude towards electronic banking adoption in Malaysia (Ndubisi and Sinti 2006). Scholars define compatibility as the degree to which an innovation is perceived as being consistent with the existing values, past experiences and the needs of potential adopters. An innovation can be compatible or incompatible with socio-cultural values and beliefs with previously introduced ideas or with client needs for innovations (Rogers 1983).The compatibility of mobile banking as perceived by members of a social system, is positively related to its rate of adoption (Rogers 1983). The term compatibility refers to the fact that an innovation is more likely to be adopted when it is compatible with an individual's job responsibilities and value system (Agarwal and Prasad 1998). Compatibility is a vital feature of innovation as conformance with user's lifestyle can boost a rapid rate of adoption (Sahin2006). Research has shown that compatibility is a significant antecedent in determining consumers' attitude towards mobile banking adoption. Compatibility has further been found influential in the adoption of virtual store and mobile banking (Al-Gahtani 2003). (Al-Gahtani 2003) found that it had significant correlation with mobile banking adoption and use. Thus, it is also likely that the relation between compatibility and usage will hold in the context of mobile banking.

Perceived Risk

According to (Gerrard and Cunningham 2003), perceived is uncertainty about the outcome of the use of the innovation. There is many reason or barriers that affect the adoption of mobile banking and one of the most known factors that affect the usage of mobile banking is the perceived risk. According to (Tarawneh 2017), security risks occur when customers are worried that other can see their personal financial information without their consent and this concern creates security risk, which consecutively affect the adoption of mobile banking apps. It has become a real challenge for banks to provide information security because users like to control all aspects of gathering information while using online services. (Hayat 2017) indicates that security risk is mainly the risk that user's account information can be compromised and used in a manner which can cause some tangible or intangible damage/loss to the account holder.

According to (Tarawneh 2017), consumers' security risk is often associated with the possibility of losing money. Surveys show that the use of mobile banking services is greatly influenced by

security risk. The gap between the actual and perceived security of a technology is what affects the behavior of people. The gap between the actual and perceived security of a technology is what affects the behavior of people (Jawadat 2019).

Trust

According to (Gefen 2003), trust is defined as "a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another". Trust is important because it helps customers overcome perceptions of uncertainty and risk and helps build appropriate favorable expectations of performance and other desired benefits. When dealing with technological and information technology enabled system for commerce activities like electronic commerce and mobile commerce then it is important to comprehend about the security and privacy concerns (Howcroft Hamilton & Hewer 2002). Ramos (2017) described trust as an important factor in many social interactions involving uncertainty and dependency. Trust in mobile banking is defined as willingness of customers to perform online banking transactions, expecting that the bank fulfills its obligations irrespective of ability to monitor. (Bauer & Freitag 2017) defines trust as an individual expectation that another individual's word is trustworthy. Thus, trust would be the willingness of one party to accept vulnerability, but with the expectation that one can rely on the other party. In the context of M-Banking, trust has been widely investigated and received considerable attention from the authors' views. Similar to online transactions, mobile transactions also involve large risks. Thus, the construction of mobile user trust is critical so that the individual is prone to use the service.

However, compared to the number of researches conducted on online trust, mobile trust is only beginning to receive attention (Masrek 2012). (Ramos 2017) observed that mobile banking trust is affected by factors associated with two aspects: supplier and mobile phone technologies. According to (Misuraca 2007) application design affects trust in mobile technology through ease of use, perceived usefulness and customization. (Misuraca 2007) examined the effect of system quality, including visual appeal and navigation structure, as factors that affect user trust in the mobile environment. Therefore, trust is believed to be an important antecedent of use intention of digital financial systems, such as m-banking (Ramos 2017).

Awareness

Accroding to (Palvia 2009), level of awareness is an important factor in encouragement of consumers to adopt related self service facilities. The amount of information customer's have about online banking has been identified the major factor impacting the adoption. The level of awareness (Palvia 2009) is an important factor in encouragement of consumers to adopt related self service facilities. Awareness of services in the M-banking services field is defined by (Alsaab 2009) as knowledge of the existence of M-banking system and its benefits. Awareness reflects the extent to which users have information and knowledge about m-banking services technology, its possible risks, and benefits. Users' concerns over security are associated with their lack of awareness of mobile banking adoption. It affects the usage of mobile banking services which includes the definitions of awareness issues related to security risks, benefits, and adoption of a system. To encourage bank customer use of m-banking, banks are required to provide information about m-banking to people, increasing overall awareness of m-banking (Al-Somali et al. 2009). (Alsaab 2009 & Alkhaldi 2017) added low m-banking use is due to the lack of awareness about such technology and its services. Increasing user awareness of how mobile banking services works and what benefits such services offer helps to build users' trust in such services and alleviates their security concerns. Users' awareness of mobile services significantly increases the performance expectancy and effort expectancy of the service, while the perception of risk should decrease (Alkhaldi 2017). He referred (Lee, Mattila, and Shim 2007) that they conducted interviews with non-mobile banking users, finding that a lack of knowledge and perceived risk contribute to resistance of M-banking use. (Alkhaldi 2017) indicated that most bank customers were not aware of the possibility for risks in e-banking services.

Demography as a Controlling variable

It has been widely recognized that demographic factors have a great impact on consumer attitudes and behavior towards new technology acceptance such as e-banking. Age, gender, educational level, income and occupation are among the most influential demographic variables affecting e-banking usage.

A study conducted by (Abayomi et al 2019) concerning the determinants of e-banking adoption in Ethiopia indicated that the young age group finds easy to accept and use new technologies while (Azouzi 2018) discovered that gender as a crucial variable impacting the customers' attitude in which adoption of new technology is popular with men than women. (Abayomi et al 2019) on his side found that e-banking usage practice is greater among those peoples who are in a better educational level as compared to others that educational level has positive impact on e-banking adoption.

With regard to the impact occupation, (Abayomi et al2019) on their study found a positive and significant relationship between occupation and e-banking adoption e-banking has been evident for government employees rather than other types of employments.

2.1.8. Limitations of Mobile Banking

Many consumers use mobile banking on their cell phones or other portable device because it allows them to quickly access information such as account balance and transaction history. The benefits of this convenience are undeniable, but there are a number of disadvantages that mobile banking users should be aware of. The technology's cost, compatibility issues and security problems may cause customers to think twice about using it (Chandran 2014).

Mobile users are especially susceptible scam called "smishing." It happens when a mobile banking user receives a fake text message asking for bank account details from a hacker posing as a financial institution. Many people have fallen for this trick and had money stolen through this scam. Online banking is usually done through an encrypted connection so that hackers cannot read transmitted data, but the consequence happens if mobile device is stolen. While all banking applications require the user to enter a password or PIN, many people configure their mobile devices to save passwords, or use insecure passwords and PINs that are easy to guess. Lack of smart phone to use Mobile Banking becomes limited. A transaction like transfer of funds is only available on high-end phones. Furthermore, regular use of Mobile Banking may lead to extra charges levied by the bank for providing the service. The loss of a mobile customer device often means that criminals can gain access to mobile banking PIN and other sensitive information (Juliet & Chukwuere 2014).

2.2. Empirical Literature

Scholars from various countries investigated number of mobile banking related researches. Majority of them argued that mobile banking usage is far below expectation. Considerable literatures have also been conducted in Ethiopia regarding E-banking and mobile banking usage. The researcher reviewed various related literatures conducted particularly on complexity, awareness, trust, compatibility, network interruption and security issue and demographic factors.

Complexity

(Brikty 2017 & Hayat 2017) concluded perceived ease of use(complexity) as major influencing factors for mobile banking adoption whereas perceived self efficacy were found to have insignificant effect on mobile banking usage for bank customers located in Addis Ababa, Ethiopia. Whereas (Kalkidan 2016) argued perceived ease of use was found to have insignificant effect on mobile banking usage for bank customers located in Addis Ababa, Ethiopia. As it is also argued by (Serkalem Mekuanint, and Tadele 2018), technology and customer's voluntariness of use had an impact on the adoption of mobile banking in greater extent. (Bekalu 2019) also argued that the finding of his study shows perceived ease of use has negative relationship with mobile banking adoption and usage.

Network Interruption

(Elfagid, 2006) studied about challenges and prospects of mobile and agent banking in Ethiopia, and indicated major challenges facing up the successful implementation of Mobile banking in Ethiopia were the infrastructural problem associated with ICT, network, lack of appropriate agent banking channels and low level of financial literacy in the Country. Concern of ICT is also referred by (Gardachew 2010) which showed 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-payment systems. (Pasha and Lisanework, 2017) described network capability as challenges faced by CBE in adopting the new technology is low level of internet penetration, poorly developed ICT infrastructure, high cost of internet, and lack of financial networks that link

different banks, frequent power interruption, technical problems on E-banking products, and no immediate solution to technical problems.

Security Risk

Gardachew (2010) indicated some challenges of using E-banking system are lack of suitable legal and regulatory frame works for E- payments, political instability, and high rates of illiteracy and absence of financial networks that links different banks. (Kalikidane, 2016) on the other hand argued that security risk has negative relationship with mobile banking usage. The finding of the research shows that perceived risk of mobile banking has negative relationship with mobile banking adoption. (Bekalu 2019) also indicated that the source of customers' perceived risk of mobile banking is being afraid of committing errors while posting. However, other risk factors considered in his research work are not perceived to be significant effect on adoption of mobile banking.

Environmental Factors

(Abel 2010) studied a research on determinants of mobile banking usage or transaction frequency in selected branches of Commercial Bank of Ethiopia in Addis Ababa, Ethiopia. The study result confirms usage frequency of mobile banking service is significantly affected by age of the user, gender, and network interruption. On the other hand, as argued by (Serkalem Mekuanint, and Tadele 2018), gender and age from the customers view and environmental factor from the institutions view had a negative relationship with mobile banking adoption. (Hamed. Mujahed. Ahmed, and Samikon 2020) reviewed literature on mobile banking adoption in organizations to identify its influential factors and its operationalization in prior literature. They classified the factors as Technology, Organization and Environment framework. The finding suggests that the influences of these factors vary across studies and most of the studies have operationalized mobile banking adoption using intention to adopt mobile banking or binary variable, rather than the actual use of the technology. As it is also argued by (Serkalem Mekuanint, and Tadele 2018), gender and age from the customers view and environmental factor from the institutions view had a negative relationship with mobile banking adoption. The study indicated that technology and customer's voluntariness of use had an impact on the adoption of mobile banking in greater extent.

Awareness

(Birikity 2017) stated awareness as one of the influencing factors in mobile banking adoption and usage. She stated banks need to recognize that a lack of effective communication to create awareness and demonstrate the benefits of M- banking service leads to customer indifference. It is thus imperative for banks to devise communication strategies and increase their efforts to promote mobile banking service among their customers. In doing so, banks must endeavor to promote the long-term benefits including cost-saving and convenience to customers. (Masrek 2012) also indicated there is positive relationship between awareness and mobile banking usage. However, (Kalkidan 2016) indicated that awareness was found to have an insignificant and positive impact on mobile banking usage. Having more or less awareness about mobile banking has no significant impact usage of mobile banking adoption for customers in Addis Ababa, Ethiopia.

Trust

(Brikty 2017) concluded perceived trust in the mobile banking service emerged as the most significant factor that impact on the adoption and usage of mobile banking service. The author added trust as most important element in encouraging the use of M-banking in which her study showed as the factor should be reinforced in order to realize a wider acceptance of Mobile banking systems in Ethiopia. (Masrek 2012) indicates that three categories of trustee which are the mobile banking provider, mobile telecommunication provider and the mobile technology are critical in establishing consumer trust leading towards mobile banking adoption. (Kalkidan 2016) also indicated trust has a positive impact on mobile banking usage when the mobile banking service providers (both the banks and mobile network provider) are perceived to be trustworthy.

Compatibility

According to this (Ebisa 2020) on compatibility was found to be affecting variable of mobile banking adoption and usage. He showed significant association between the variables. (Paun 2010) on his side indicates direct effect of compatibility on mobile banking usage. (Birikity, 2017) also indicated compatibility as one of the reasons cited for non use of mobile banking.

These researches found to have complexity, awareness, trust, compatibility, network interruption and security risk have positive relationship with mobile banking usage. The authors' articles showed various factors that can be challenges to growth of mobile banking service.

They concluded in such a way that customers trust, lack of awareness, compatibility problem, and infrastructure problem are among the variables repeatedly investigated if they have directly affected usage of mobile banking. Others focused on technology in which poorly developed ICT infrastructure, organization, and environment are among them concluding their direct relationship with growth of mobile banking. (Brikty 2017; Hayat 2017; Serkalem Mekuanint, and Tadele 2018) studies showed the same result as this study concluded complexity has positive relationship with mobile banking usage in which ease of use affects customers' interest to use mobile banking. On the other side, (Kalkidan 2016 & Bekalu 2019) argued that complexity has negative relationship with mobile banking usage. (Birikity 2017 & Masrek 2012) indicated similar result that awareness has positive relationship with mobile banking usage while (Kalkidan 2016) argued there is no or lesser relationship between awareness and mobile baking usage. As indicated by (Brikty 2017; Masrek 2012 & Kalkidan 2016) trust has direct effect on mobile banking usage in which customers preference dependent on their trust on the service.

(Ebisa 2020; Paun 2010 & Birkty, 2017) indicated the same result that mobile banking usage can be directly affected by compatibility of the service in which it involves their value, habits and experience. Regarding network interruption, (Elfagid, 2006 & Gardachew 2010) indicated the same result that network capability affects mobile banking usage. Mobile banking in Ethiopia has infrastructural problem associated with ICT, network, lack of appropriate agent banking channels and low level of financial literacy in the Country. Regarding security risk, (Gardachew 2010) have showed positive relationship that it has positive relationship with mobile banking usage while (Kalikidane 2016 & Bekalu 2019) indicated negative effect that security risk has negative relationship with mobile banking usage in which users failure to use mobile banking is not because of perceived security risk. (Abel 2010) indicated that there is positive relationship between environmental factors like age, gender, while (Serkalem, Mekuanint, and Tadele 2018) indicated there is no relationship between environmental factors and mobile banking usage.

2.3. Conceptual Framework

Perceived ease of use (PEOU) (complexity) is one of the factors incorporated in Technology adoption Model (TAM) (Davis 1989). TAM is a simple and practical theoretical model which appears to be the most widely accepted among information system researches (Luarn & Lin, 2005) which argues the intention to use a particular technology (Mobile banking) based on personal behavioral intention, which in turns is determined by perceived ease of use. The other variable is incorporated in the Unified Theory of Acceptance and Use of Technology (UTAUT) Model under Facilitating Conditions. Network capability believed to be one of the factors affecting mobile banking usage.

The other four variables are incorporated in Innovation Diffusion Theory (IDT) which is defined as the process in which an innovation is communicated thorough certain channels over time among the members of a social system. Under this theory, compatibility, perceived trust, perceived risk (Security) and awareness variables are incorporated. Compatibility is defined as the degree to which an innovation is perceived as being consistent with the existing values, past experiences and the needs of potential adopters. An innovation can be compatible or incompatible with socio-cultural values and beliefs; with previously introduced ideas; or with client needs for innovations (Sahin2006). Perceived Risk is uncertainty about the outcome of the use of the innovation. There is many reason or barriers that affect the adoption of mobile banking and one of the most known factors that affect the usage of mobile banking is the perceived risk (Tarawneh 2017). Trust is defined as "a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another". Trust is important because it helps customers overcome perceptions of uncertainty and risk and helps build appropriate favorable expectations of performance and other desired benefits. (Palvia 2009) indicates level of awareness is an important factor in encouragement of consumers to adopt related self service facilities. The amount of information customer's have about online banking has been identified the major factor impacting the adoption.

Thus, the relationship between influencing factors and mobile banking usage is indicated as follows:

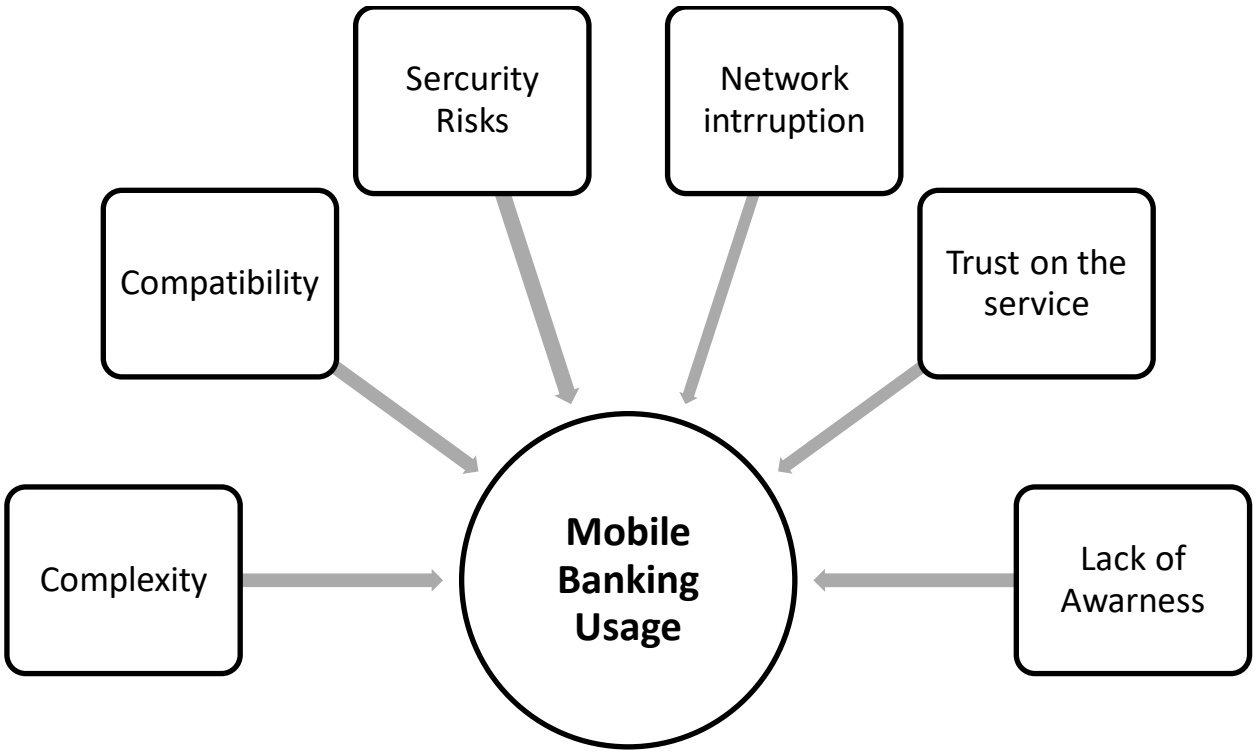

Figure 1: Conceptual Frame work indicating factors affecting low mobile banking usage

CHAPTER THREE

3. RESEARCH DESIGN & METHODOLOGY

3.1. Research Design & Approach

This research is designed to utilize explanatory research design in combination with quantitative approach. Explanatory research helped to look for correlations, or relationships between dependent and independent variables; while quantitative approach emphasized objective measurements such as statistical, mathematical, or numerical analysis of data collected through questionnaires and interview. This research is explanatory as it explains the aspect of the study and tries to create relationship between the dependent and independent variables. In order to investigate if the variables directly affect usage of mobile banking, multiple regression analysis is used. While analyzing the independent variables' effect on the dependent variables, the result's validity and credibility was supported by triangulation method. Various previous researches' result on the related topic and respondents' feeling towards low mobile banking usage are incorporated in the result.

3.2. Source & Type of Data

Data collection is the process of gathering and measuring information on variables of interest (Kabir 2016). This study used both primary and secondary sources for data collection. Secondary data was used to increase the overall effectiveness of research made on all variables and their relationships. The Likert type questions were used for identifying the factors and prospects of the subject matter while the result to be observed from the open ended questions were used to complement the result found from the Likert scale type questions. In this research, various data types were used. Numerical data was used to count number of occurrences of demographic factors, while ordinal data was used to gather information to assess the variables. The questionnaire distribution was made to CBE mobile banking users and the interview was made to CBE employees as they are few in number. During filling the questionnaire, the researcher clarified the question and objective of the research when respondents required more information.

3.3. Validity and Reliability Test

Reliability and validity are concepts used to evaluate the quality of research. They indicate how well a method, technique or test measures something. Reliability is about the consistency of a measure, and validity is about the accuracy of a measure (Hamid 2016). The validity of the research content, coverage of contents adequacy and appropriateness of interpretations and actions based was tested using SPSS reliability model. The research report showed existing reality in the current condition and correlation between independent and dependent variables has been confirmed. The minimum value of validity is evaluated based on significance level 0.05. Similarly, the researcher measured reliability of the result which indicates extent to which it was done without bias.

3.3.1. Reliability Test Result

Although it is not possible to give an exact calculation of reliability, an estimate of reliability can be achieved through different measures (Heale & Twycross 2015) .To ensure internal consistency among the items included in each of the scales, Cronbach's coefficient alpha is estimated with the concept that higher Alpha coefficients indicate higher scale reliability. As a rule of thumb, (Koonce and D. Kelly 2014) indicate that a general accepted rule is that α of 0.6-0.7 indicates an acceptable level of reliability, and 0.8 or greater a very good level. The questionnaire describes internal consistency in 0.743 Cornabach's Alpha result. The test indicates that questionnaire prepared to study factors affecting usage of mobile banking would produce the same results if the study was to be conducted again under the same conditions.

Reliability Statistics

Variables	Cronbach's Alpha
Mobile Banking usage	.603
Trust	.733
Complexity	.610
Network interruption	.617
Compatibility	.716
Security Risk	.749
Reliability of Total Scale	**.743**

Table 1: Cornabache Alpha result

3.3.2. Validity Test

Validity is defined as the extent to which a concept is accurately measured in a quantitative study (Heale 2015). It is tested using correlation between questionnaires that measured the extent to which the items comprises the scale accurately to represent factors affecting usage of mobile banking in CBE in Jimma town. A test is said to be valid if the performances measured by it are accurate. In other words a test is valid if it serves the purpose for which it is designed. It is the degree to which an assessment measures and what it is supposed to measure. It is the degree to which an assessment measures and what it is supposed to measure. Validity is referred to the extent to which the measuring device is useful for a given purpose (Sarmah 2012).

The average result indicates below significance level which indicates the entire questionnaire accurately measured the research target. As indicted in Pearson correlation coefficient, the questionnaires are valid that all test of significance are below 0.05 which are significant result. And all significance of 2-tailed Pearson correlations is above Pearson correlation critical value table of 0.05 degree of freedom. Hence, the items that comprise the scale accurately represent or measure the information that is being assessed.

Pearson's correlation coefficient is summarized in the table below:

N=Sample Size

Degree of freedom =N-2

Rule: Obtained Value > critical value

Sample Size=324

DF=324-2= 322…0.112891

DF(N-2)	Significance	Critical Value	Pearson Correlation	Validity
322	.000	0.112891	.952	Valid
322	.000	0.112891	941	Valid
322	.000	0.112891	.929	Valid
322	.000	0.112891	.679	Valid
322	.000	0.112891	.945	Valid
322	.000	0.112891	.879	Valid
322	.000	0.112891	.879	Valid

Table 2: Pearson Correlation coefficient

3.4. Target Population and Sampling Design

3.4.1. Target population

Population is described as a group of elements or cases, whether individuals, objects, or events, that conform to specific criteria and to which we intend to generalize the result of the research (McMillan and Schumacher 2001). This research is aimed to gather information from CBE customers and employees. For this research, the target population comprises of 3250 customers of commercial bank of Ethiopia in Jimma town, and 14 managers and 14 employees of the same bank in the same town. The population group was selected from 14 branches in which 350 customers grouped from 2 grade four branches; 300 customers from one grade three branch; 225 from 2 grade two branches and 200 customers from 10 grade one branches customers. The population group was selected based on the grade level of the branches while customers are selected based on their active appearance at branch for various reasons like salary, transfer, frequent and permanently appearing merchants that are at least one year since registered.

3.4.2. Sampling Determination

The basic purpose of sampling is to provide an estimate of the population parameter and to test the hypothesis. It provides a valid estimation of sampling error (Kabir 2016). For this research purpose which collected response from CBE mobile banking users and CBE employees, systematic sampling method was used in accordance with purposive sampling. Using systematic sampling procedure removes bias as element in the population has a known and equal probability of selection while purposive sampling helped the researcher to effectively find registered customers, E-banking employees at CBE and branch managers to get important information about mobile banking. It was effective as CBE mobile banking users were contacted at branch and outside branches.

Sampling design is a mathematical process of selecting the sample for estimating the population characteristics (Sabir 2016).Accordingly, list of recruited mobile banking users in CBE were sampling frame in which the sample was drawn. For studying factors affecting mobile banking usage rate, sample was determined by applying (Yamane's 1967) formula interval of 90% and variability 0.1 for mobile banking users.

Regarding CBE employees, the researcher used non probability sampling method which is purposive sampling to select concerned bodies and assigned employees. Hence, out of 14 managers in Jimma town, all of them were used as respondents. To select employees, the researcher focused on 14 employees who are assigned in mobile banking activation.

To identify, number of customers to participate in the research, considering 5% sampling error and 95% confidence level, the sample is determined as follows:

$$n = \frac{\mathrm{Z}^2.\mathrm{N}.\sigma^2\mathrm{p}}{(N-1)e^2 + Z^2\sigma p}$$

Where N=Number of Population

n=Sample Size

e=Sampling Error σp

$\sigma p = StandardDeviationofPopulation$

Z= standard variate at a given confidence level

Hence, the researcher assumes the following estimation in sample size determination:

e=+/-5%

p=0.5

Z=95%

$$n = \frac{\mathrm{Z}^2.\mathrm{N}.\sigma^2\mathrm{p}}{(N-1)e^2 + Z^2\sigma p}$$

$$n = \frac{0.95^2.3250 * 0.5^2}{(3250-1)0.05^2 + 0.95^2 * 0.5^2}$$

$$n = \frac{0.9025 * 3250 * \ 0.25}{(3250 - 1)0.0025 + 0.9025 * 0.25}$$

$$n = \frac{733}{2.1}$$

$$n = 349$$

3.4. Method of data analysis and presentation

Data Analysis is a process of systematically searching and arranging the interview and questionnaire transcripts, documents analysis, video recordings, and other materials that accumulate to increase the understanding of them (Sugiyono 2010). After having the data from the interviews and gathering data using questionnaire, documents analysis, and the researcher analyzed the data by defining questions, set clear measurement priorities, collect data, analyze data and finally interpreted results. The qualitative type of data analysis technique was used based on the data gathered from CBE employees. It aims to derive theory from systematic analysis of data based on categorization approach.

Statistical Package for Social Science (SPSS) version 20 is used to analyze descriptive statistics such as frequency distribution to assess the demographic profile of the respondents to make the analysis more meaningful, clear and easily interpretable. Multiple Regression analysis is used to assess effect of independent variables on mobile banking usage. The data obtained from the study was entered into the computer and statistically analyzed including descriptive statistics, reliability analysis and regression analysis.

3.5. Model specification and Description

According to (Afroz 2019), model specification is the process of determining which independent variables to include and exclude from a multiple regression equation. The study uses multiple linear regression analysis to estimate the association between the risk factor and the outcome and test significance of the regression coefficient to assess whether the association between the risk factor is statistically significant. In this research, the relationship between six independent variables

and the corresponding dependent variable is found out. Factors such as lack of awareness, security risk, trust on the service, compatibility, complexity and network interruption are the independent variables' and mobile banking usage rate is dependent variable. The multiple regression analysis helped to forecast the effects or impacts of changes, and understand how much the dependent variable changes when independent variables are changed**.** In addition, the researcher identified the strength of the effect that the independent variables have on a dependent variable**.** The researcher assumed multiple regression assumptions such as, linearity, autocorrelation and homescasticity. Multicollinearity occurs when the independent variables are not independent from each other; while linearity shows the relationship between the independent and dependent variables are linear. Autocorrelation measures the degree of correlation of the same variables between two successive time intervals, and homoscedasticity assumes that different samples have the same variance, even if they came from different populations.

The mathematical relationship between the dependent and independent variables is:

$Y= a+b_1x_1+b_2x_2+b_3x_3+b_4x_4+b_5x_5+b_6x_6$, where

Y= Predicted Value/Expected Value

a= the value of Y when all of the independent variables are equal to zero,

b= the estimated regression coefficients

x= independent variables

The equation indicates that low mobile banking usage (Y) equal to the calculated coefficient (b) which is coefficient in the multiple linear regression equation that quantifies the association between the risk factor, if independent variables (X1 through X2) are totally zero. Low mobile banking changes as each independent variable (indicator) changes taking other variables constant.

3.6. Ethical Considerations

Ethical considerations emphasize moral obligations or commitments that should be binding or necessary for proper conduct. To put it quite simply, the researcher took necessary care not to harm participants in any way, no matter what the potential benefit it was. In other words, other related researchers ideas are not taken directly; participants' information is properly used for the research purpose without indicating individual persons. And all secondary data would not be transferred to third party in any way.

CHAPTER FOUR

4. DATA ANALYSIS AND INTERPRETATION

This section deals on discussion of the data gathered based on the research methodology designed for the research is conducted. The first section of this chapter focuses on descriptive statistics as well as regression analysis. Besides the descriptive analysis and inferential statistics is applied to find out the relationship between factors affecting mobile banking usage and low mobile banking usage. As indicated in methodology part, the questionnaire was distributed to 349 customers of whom 324 complete questionnaires are involved in the data analysis.

4.1. Descriptive Analysis

Though the research result is inferred based on regression analysis data, descriptive statistics is presented for bank management and future researchers visualize what the data was showing in a more simple and meaningful way, which allows simpler interpretation of the data.

4.1.1. Demographic Statistics

Gender	Male	218	67%
	Female	106	33%
Age	Under 20	44	14%
	21-30	155	48%
	31-40	86	27%
	41-50	27	8%
	Above 50	12	4%
Marital Status	Married	173	53%
	Unmarried	151	47%
Employment	Self employed	96	30%
	Government Worker	146	45%
	Not Employed	82	25%
Educational Status	Masters/PHD	7	2%
	Degree	162	41%
	Diploma	74	23%
	High School Complete	78	24%
	No Education	33	10%

Table 3: Frequency Description of Respondents

Table 1 shows demographic profile of the respondents of both customers and bank employees. The frequency distribution indicates that majority of the respondents are male which are 218 (67%) while the female respondents are 106(33%). The status shows that age category between 21 and 30 are majority of the respondents which are 155(48%) while respondents in age category of 31 and 40 are 86(27%). Age category of the respondents which are under 20 are 44(14%) and age between 41 and 50 are 27(8%). Respondents above 50 years of age are 12 or 4%. The other demographic profile of the respondents gathered is marital status in which married respondents are 151(47%) while unmarried respondents are 173(53%). Regarding employment, 96(30%) are self employed while government workers are 146(45%), and 82(25%) of them are unemployed. Regarding educational status, significant number of mobile banking users are degree holders that are 132(41%) while the next higher number of users are high school complete with 78(24%) and followed by 44(23%). 33(10%) of the respondents have no tangible certified education except minor reading and writing skill.

4.1.2. CBE Employees Work Experience

Item	Less than 1 year		Two to three years		3-5 years		More than 5 years	
	Qt.	%age	Qt.	%age	Qt.	%age	Qt.	%age
How long have you worked in the bank?	3	11%	8	29%	17	61%	0	0%
How long have you worked in the current position?	10	36%	4	14%	14	50%	0	0%

Table 4: CBE Employees Work Experience

As indicated in the table 2, 17(61%) of the respondents have worked in the bank for the two to three years of experience, while 8(29%) of them worked from three to five years and 3(11%) of them worked in the bank for one year. Regarding current position of the employees, 14(50%) of them have experienced the position from three to five years, 14(50%) of them worked from three to five years while 10(36%) of the workers have worked from two to three years and the remaining 4(14%) worked for one year.

4.1.3 Accessibility of Mobile banking

	Accessibility of customers to mobile banking		Frequency	Percentile
1	Do you have an Internet access your mobile phone?	Yes	108	33%
		No	116	67%
2	Do you have an Access to cell phone that enables Mobile banking?	Yes	211	65.10%
		No	113	34.90%
3	Do you have access to read about mobile banking?	Yes	105	32%
		No	219	68%

Table 5: Descriptive Statics towards accessibility to get mobile banking

As indicated in table 3, access to internet, compatibility of cell phone and accessibility to get information is believed to affect usage of mobile banking. The descriptive statistics of the respondents toward majority access to internet and better cell phone shows that majority of the respondents which are 116 (67%) have no internet access on their mobile while 108(33%) of them responded they have internet access on their mobile.

On the other hand 211(65%) of respondents showed that their mobile is compatible to mobile banking in either USSD or Mobile applications while the remaining 113(35%) of the respondents responded as their mobile phone doesn't feat to access mobile banking in any of the two options. Besides, access to information regarding mobile banking showed that 219(68%) of them have no meaningful access to mobile banking information while the rest 105(32%) of them can get it. The mobile banking accessibility assessment indicates majority of the respondents showed that there is low internet accessibility to their mobile phone though their mobile phone can access mobile banking service using USSD. As it also indicated in (Abdulahi 2019), Accessibility affects mobile banking which maximizes the ability of users to access the service. Jimma town mobile banking users have access to mobile banking using any telephone type having SIM card. However, users do not get enough internet access to use mobile apps.

4.1.4.1.Low Mobile Banking Usage

As shown in table 6 , the means of customers' responses on respective statements ranged between 2.35 to 2.61.The highest mean, 2.61 dictates that most of the respondents agree that mobile banking fulfills necessary services. The second point which discusses about preference of mobile banking than going to bank branches mean value indicates 2.5 which is neutral perspective. When we see about access of mobile banking less than average customers agreed that they have required access to use mobile banking. Similarly, less than average respondents indicated they use mobile banking always and are interested to use mobile banking. This information is important in that it could be used by management to determine whether customers are using the service as intended.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
I always use mobile banking	324	1	5	2.42	1.166
I prefer mobile banking than going to bank branches	324	1	5	2.50	1.125
I am interested to use MB	324	1	5	2.35	1.002
I have access to MB	324	1	5	2.43	1.028
Mobile banking fulfills necessary service I need	324	1	5	2.61	1.195

Table 6: Descriptive statics towards low mobile banking usage

The descriptive data analysis on low mobile banking usage indicates that customers do not always use mobile banking when they need it. Instead they prefer to go to banking branches for any transaction they want. One of the low preferences to use mobile banking is low interest to transact through mobile banking. Customers' response on accessibility to mobile banking has also showed minimum rank in which majority of the respondents disagreed on availability of the simplicity to get it. The result indicates respondents' do not believe that mobile banking fulfills all necessary service items for their transaction. As shown in (Abel 2019), mobile banking usage is affected by various determinants. (Abdulahi 2019) also concluded that accessibility and convenience play significant effect on mobile banking usage. Likewise, the descriptive analysis shown mobile banking usage is influenced by complexity, awareness, trust, network interruption, compatibility and security.

4.1.4.2.Complexity of mobile banking usage

Customers' response indicates that they cannot differentiate mobile banking to be easy or not. Regarding quickness to service delivery, responses showed that mobile banking is not quick to satisfy their need of transaction within the time required. In response to convenience to service delivery, customers' reaction showed that it is not enough to say the service is convenient. Similarly the data showed mobile banking efficiency and learnability is poor. Complexity in use is a major factor in usage of mobile banking in which researchers suggest that users' intention to use mobile banking is inhibited by the perceived complexity of the innovation. Complexity in use, technical infrastructure, and design of technology are reported as individual barriers to mobile banking in a number of studies (Alkhaldi 2017& Lin 2011).

As shown in table 7, the means of customers' responses on respective statements ranged between 2.31 to 2.73. The highest mean, 2.73 indicates that most of the respondents agree that mobile banking is convenient to complete banking activities more quickly. The second point which discusses about easiness of mobile banking service mean value indicates 2.58 which is a little more than average, but doesn't guarantee simplicity. Regarding usefulness of mobile banking to enjoy perceived ease of use, a mean of 2.45 indicates disagreement that they do not get the service in easy way. When we see quickness of the service and efficiency, mean value of 2.31 and 2.37 indicates below average that the service is neither quick nor efficient. It is believed that it could be used by management to determine to what extent their mobile banking service is complex.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
M-banking makes banking easier to do banking activities	324	1	5	2.58	1.057
M-banking enables me to do banking activities more quickly	324	1	5	2.31	.951
M-banking enables one to complete banking activities more conveniently	324	1	5	2.73	1.363
M-banking allows one to manage banking activities more efficiently	324	1	5	2.57	1.098
M-banking is useful in conducting banking activities Perceived ease of use	324	1	5	2.55	1.091

Table 7: Descriptive statistics on response towards complexity of mobile banking usage

4.1.4.3.Lack of Awareness

As indicated in table 8, mean value of items on awareness is between 2.34 and 2.95 and standard deviation of 1.066 to 1.510. The highest mean value of 2.95 and 1.510 indicates that more than average respondents indicated that there are enough broachers and teaching materials about mobile banking in CBE while mean value of 2.48 and 1.073 customers indicated they receive information about benefits of mobile banking. Regarding easiness to learn how to use mobile banking, a mean value of 2.48 and 1.073 of standard deviation showed easiness to learn how to use Mobile banking. Regarding guideline to use mobile banking, a mean value of 2.34 and 1.066 of standard deviation is indicated which is lesser guideline distribution. Hence, the bank may use the data to improve awareness delivery systems.

Awareness focused responses indicated reaction which can directly affect growth of mobile banking. Customers reacted that CBE doesn't fulfill requirement to necessary information and usage procedures. The other indicator for awareness gap in mobile banking usage is low benefits

and lack of user guideline showed significant effect in the response. In order to be attracted to the service, majority of the respondents showed weak distribution of promotion materials to the public. The result also indicated disagreement of the respondents to broachers and multilingual promotion materials.

Alsaab (2009) discovered that the lack of m-banking use is due to the lack of awareness about such technology and its services. Increasing user awareness of how m-banking services work and what benefits such services offer helps build users' trust in such services and alleviates their security concerns. (Alkhaldi 2017) indicates that awareness minimizes perceived risks and enhances positive user expectancy of m-banking.

Descriptive Statistics					
Item	N	Minimum	Maximum	Mean	Std. Deviation
I receive information about M-banking services from my bank	324	1	5	2.48	1.073
I receive enough information on how to use M- banking services	324	1	5	2.51	1.073
I receive enough information about the benefits of M-banking	324	1	5	2.48	1.08
The bank gave me guidelines to use mobile banking	324	1	5	2.34	1.066
There are enough broachers and promotion materials about mobile banking in CBE in different local languages	324	1	5	2.95	1.51

Table 8: Descriptive statistics on response towards lack of awareness on mobile banking usage

4.1.4.4.Trust on mobile banking

As indicated in table 9, the mean value ranges from 2.36 to 2.63. The highest mean value indicates that customers showed they believed CBE MB is not designed for only profit purpose while the least mean value 2.36 indicates customers do not fear about integrity of CBE mobile banking usage. The result could help the bank to identify extent to which customers trust their service.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
I feel that CBE delivery the service I expect	324	1	5	2.51	1.075
I do not fear about integrity of CBE mobile banking usage.	324	1	5	2.36	1.021
I do not fear to transact on mobile banking	324	1	5	2.68	1.347
I have never heard loss on customers balance through mobile banking	324	1	5	2.62	1.170
I believe that CBE MB is not designed for only profit purpose.	324	1	5	2.63	1.182

Table 9: Descriptive statistics on response towards Trust on mobile banking usage

The description statistics shows that customers are not confident to risk factor in mobile banking. Security and privacy are obstacles in adoption and usage of electronic based banking activities. Customers prefer to use those facilities which they believe to be the secured one and which are from some believable source. Though respondents have never been stolen, they fear that theft is possible threat in using mobile banking as it can be accessed by technological cable personalities in any side of the world. The threat and lack of confidence doesn't allow them to transact and get services required without hesitation. Respondents showed that technological capability to protect customers' data is realized. As indicated (Hutchison 2006), networks transporting packet data without overlying security protocols has proven vulnerable to some security attacks, with most of the authentication and confidentiality mechanisms having been cracked in which the effect is shown in mobile banking applications.

According to (Misuraca 2007) service design affects customers trust in mobile technology through ease of use, perceived usefulness and customization. Usage of mobile baking can affected due to customers' expectation, integrity and vulnerability to theft. Trust is believed to be an important antecedent of digital financial systems, such as m-banking (Ramos 2017).

4.1.4.5.Compatibility

As indicated in table 10, the mean vale ranges from 2.33 to 2.81 with standard deviation of 1.041 to 1.380 respectively. The highest mean value indicated that mobile banking is compatible with their mobile device while the least mean value indicated the service is compatible to their experience. The result may help the bank that they work on compatibility of the service.

Compatibility is the degree to which an innovation is perceived as being consistent with the existing values, past experiences and the needs of potential users. Respondents' reaction to the interest involving value and beliefs of the mobile banking users showed disagreement that CBE Mobile banking is compatible. Compatibility to Customers ways of life affects usage of mobile banking. The respondents showed that they less believe it fits to the way they live and want to live. In addition to value, habits and experiences of the users, customers also want mobile banking should be compatible to their mobile devices whether it is smart or not. Researchers argued compatibility that it refers the fact that an innovation is more likely to be adopted when it is compatible with an individual's job responsibilities and value system (Agarwal and Prasad 1998). (Al-Gahtani 2003) found that compatibility has significant correlation with mobile banking adoption and use.

Descriptive Statistics					
Item	N	Minimum	Maximum	Mean	Std. Deviation
Mobile banking is suitable with my interest	324	1	5	2.50	1.108
Mobile banking is suitable with my work habits and environment	324	1	5	2.49	1.089
Mobile banking is compatible to the way I live want to live.	324	1	5	2.51	1.158
Mobile banking is compatible to my mobile device	324	1	5	2.33	1.041
Mobile Banking is compatible with my experience	324	1	5	2.81	1.380

Table 10: Descriptive statistics on response towards compatibility of mobile banking usage

4.1.4.6. Network interruption

As indicated in table 11, the mean value ranges from 2.12 to 2.51 and 0.668 to 1.033 respectively. The highest mean value 2.51 which is almost average indicates that mobile banking helps customers to use the service whenever they wanted. The least mean value which is 2.12 indicates CBE mobile banking service works without interruption. The result may help the bank to identify extent to which network capability affects customer mobile banking service.

Descriptive Statistics					
Item	N	Minimum	Maximum	Mean	Std. Deviation
CBE Mobile banking helps me use the service whenever I wanted	324	1	5	2.51	1.033
CBE mobile banking service works without interruption	324	1	5	2.12	.668
I am confident on CBE mobile banking network	324	1	5	2.31	.994
Mobile Banking service is not interrupted in when I use it.	324	1	5	2.32	.814
I am confident that CBE Mobile banking service is always online.	324	1	5	2.26	.814

Table 11: Descriptive statistics on response towards network interruption of mobile banking usage

Network availability is crucial in rendering mobile banking service. As the descriptive data indicates, customers are confident towards network availability. Majority of the responses shows poor network infrastructure as customers intend to use mobile banking. Network interruption is one of the major factors affecting usage of mobile banking. If telecommunications infrastructure is less than stable, or unable to withstand the data volumes generated by app users, banks and financial industries need to ensure their telecommunications providers to provide the speeds and bandwidth management to cater for peak use time's optimum network availability (Ebisa 2020).

4.1.4.7.Security Issues

As indicated in table 12, the mean value ranges from 2.27 to 2.61 and standard deviation of 0.966 to 1.233 respectively. The highest mean value of 2.61 indicates customers are confident that others have no chance to manipulate their bank account information through their mobile banking service while the least mean value 2.27 indicates customers feel confident that technological advances make for them to use mobile banking.

Descriptive Statistics					
Item	N	Minimum	Maximum	Mean	Std. Deviation
I feel confident that technological advances makes it safe for me to use Mobile banking	324	1	5	2.27	.966
I feel assured that legal structures adequately protect me from problems associated with using M- banking services	324	1	5	2.30	.998
M-banking has enough safeguards to make me feel comfortable using it	324	1	5	2.38	1.023
I am confident that others have no chance to manipulate my bank account information through my mobile banking service	324	1	5	2.61	1.233
CBE MB is free from security risk	324	1	5	2.51	1.195

Table 12: Descriptive statistics on response towards security issues on mobile banking usage

The descriptive statistics indicates that majority of the respondents do not feel confident on technological advances as there is no protection packages are not developed for possible risk factors to occur. The response also indicates that their confidence level is low that there might be some manipulation of their bank accounts information through accessed mobile banking service which is exposed for various hackers and information stealers.

Security risk is mainly the risk that user's account information can be compromised and used in a manner which can cause some tangible or intangible damage/loss to the account holder Hayat (2017). Security risks occur when customers are worried that other can see their personal financial information without their consent and this concern creates security risk, which consecutively affect the usage of mobile banking apps. It has become a real challenge for banks to provide information security because users like to control all aspects of gathering information while using online services. According to (Tarawneh, 2017), consumers' security risk in mobile banking service is often associated with the possibility of losing money.

4.1.5. Employees' response on mobile banking usage factors

As indicated in table 13, the mean value ranges from 2.07 to 2.71. The highest mean value 2.71 and standard deviation indicates that information provided by the bank is enough to attract and increase usage rate while the least mean value 2.07 and 1.016 standard deviation indicates customers trust on mobile banking is high.

CBE employees feel that Mobile banking simplifies banking service. It helps customer get the service wherever they are. They feel that various variables affect usage of customer readiness to get awareness and fear of security affect usage level. They think that customer's cell phone type doesn't affect usage of mobile banking as it can be rendered though USSD if it level is lower.

Various articles showed various factors that can be challenges to growth of mobile banking service. Of these factors, ease of use or complexity, lack of proper awareness, trust, compatibility, network interruption, and security risk issues are the major determinants for mobile banking usage. Researchers like (Alkhaldi 2017 & Lin 2011) suggest that users' intention to use mobile banking is inhibited by the perceived complexity of the innovation in which service design plays a great role. (Alkhaldi 2017) in his side indicates awareness minimizes perceived risks and enhances positive user expectancy of m-banking; while (Misuraca 2007) in his side indicates service design affects customers trust in mobile technology through ease of use, perceived usefulness and customization in which customers trust affects mobile banking usage.

Innovation is more likely to be adopted when it is compatible with an individual's job responsibilities and value system (Agarwal and Prasad 1998), and network interruption is one of the major factors affecting usage of mobile banking if required speed is provided (Ebisa 2020).According to (Tarawneh 2017), consumer's security risk is often associated with the possibility of losing money in which it is one of the usage factor.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
CBE MB usage rate is high	28	1	5	2.54	1.201
Customers trust on MB is high	28	1	5	2.07	1.016
Confidence level on security of mobile banking in terms of technology, theft and fraud High	28	1	5	2.61	1.166
Compatibility of the system to customers' phone, values, habits and experience is high	28	1	5	2.57	1.168
Complexity of the system in terms of simple use, convenience and simplicity to solve problems is low	28	1	4	2.14	.891
Level of good network for mobile banking users that is not interrupted	28	1	5	2.46	1.232
Information Provided by the bank is enough to attract and increase usage rate	28	1	5	2.71	1.272

Table 13: Descriptive statistics on response of workers towards low mobile banking usage

4.1.7. Open ended questions' response

4.1.7.1. Responders attitude towards mobile banking usage

Respondents have questioned to explain their attitude towards using mobile banking. They indicated that using mobile banking is incomparable with going to banking branches for banking service every time. However, there are various problems that hinder them not to use. Customers' resistance to acceptance trends priority problem while network failure is the next. Many times they start to have transitions, the system fails which affects their confidence next time they require the service. The other problem is lack of receipts which helps for reconciliation reasons and fear to accept possible risk. Mobile banking is feared to be not secured which is accessed by various hackers located in various countries. The system locks as customers try three times wrong login in which most of them do not request for reset. Respondents also indicated that they do not trust mobile banking due to system failure and security reasons. Customers feel that employees support after first introduction is poor which doesn't invite them to request for extra support because of

ability to support and lesser willingness. Sometimes, customers mistake is not reversed which affects their transaction interest.

Customers attitude towards using mobile banking also have a great role in mobile banking. Perceived usefulness, perceived risk, cost and compatibility affect consumer acceptance of M-banking whereby attitude transfers the effects of the consumers' perceptions to their intention to use M-banking (Islam, 2014).

4.1.7.2. Ways mobile banking usage can be improved in the future

The response indicated that improving system capability in terms of network infrastructure, ability to protect theft and fraud, simplicity to use the service, ways to manage the access like PIN reset when locked, and short financial transactions which minimizes mistake. They indicated simplifying ways to get the access should be short and non bureaucratic. Minimizing system interruption, invoice delivery and error reversal should be considered. (Jayantila, 2013) claim ways mobile banking usage increases. These can be evolving mobile payment space, innovating trustable product and service offering, consider the value customers to be best accessed, and become the preferred gateway in banking and related services involving security issues. Responders also consider that current way of mobile banking delivery do not increase usage rate; this is because majority of the activation is made just because of the plan not to maximize the user rate in terms of transaction. Hence, working on the quality helps to maximize the usage. (Ibrahim & Sohail, 2012) referred to simplify service delivery, while (Alsaab 2009) suggest proper awareness creation for mobile banking usage. Importance of trust and minimizing security risk are also necessary variables to be considered as indicated by (Ramos, 2017&Tarawneh, 2017). (Ibrahim &Sohail, 2012) referred to simplify service delivery, while (Alsaab 2009) suggest proper awareness creation for mobile banking usage. Importance of trust and minimizing security risk are also necessary variables to be considered as indicated by (Ramos, 2017&Tarawneh, 2017).

4.1.7.3. Regarding Simplicity and compatibility of mobile banking

Mobile banking should be user friendly. They want the system should be compatible to their work habit and environment. It should consider the public value and living habits. As indicated in (Lin, 2011) indicates that service simplicity maximizes mobile banking usage in which banks are required to adopt user friendly technologies.

Responders also consider that current way of mobile banking delivery do not increase usage rate; this is because majority of the activation is made just because of the plan not to maximize the user rate in terms of transaction. Hence, the bank better works on quality rather than quantity as a whole. Researchers indicate solving available problems related to simplicity and service compatibility of mobile banking usage.

4.1.7.4.Regarding bank's mobile banking service network capability and infrastructure

One of the major problems of mobile banking is network failure from telecom service. The system interrupts due to repeated network down status because of various reasons like power interruption and cable disconnection. Hence, the bank better find ways to manage its network lines. As stated by (Ebisa, 2020 & Alkhaldi, 2017) Security data storage and bandwidth allocation during peak times is required to increase customers' mobile banking usage.

4.2. Inferential Analysis

4.2.1. Multiple linear regression assumptions

4.2.1.1. Linearity Assumption

Linearity in multiple linear regression analysis allows us to estimate the association between a given independent variable and the outcome holding all other variables constant (Mooi, 2014). Linearity of dependent and independent variables is tested to identify if there is a linear relationship or linear association between them which described as a straight line relationship between the variables (Kumari & Yadav 2018). The multiple linear regression tests indicated positive relationship between the variables and dependent variable in which for every increase in variable, there is increase by a constant rate.

$Y= a+b_1x_1+b_2x_2+b_3x_3+b_4x_4+b_5x_5+b_6x_6$, the multiple regression model indicted the result that

$Y= 12.113+0.211X_1+0.193x_2+0.186x_3+0.109x_4+0.242x_5+0.152x_6$

Hence, at x=0, Y=12.113

if x (independent variables) increases by 1, y increases by the same amount which indicates linear relationship. The relationship between low mobile banking usage in CBE in Jimma town and independent variables is shown using chart below.

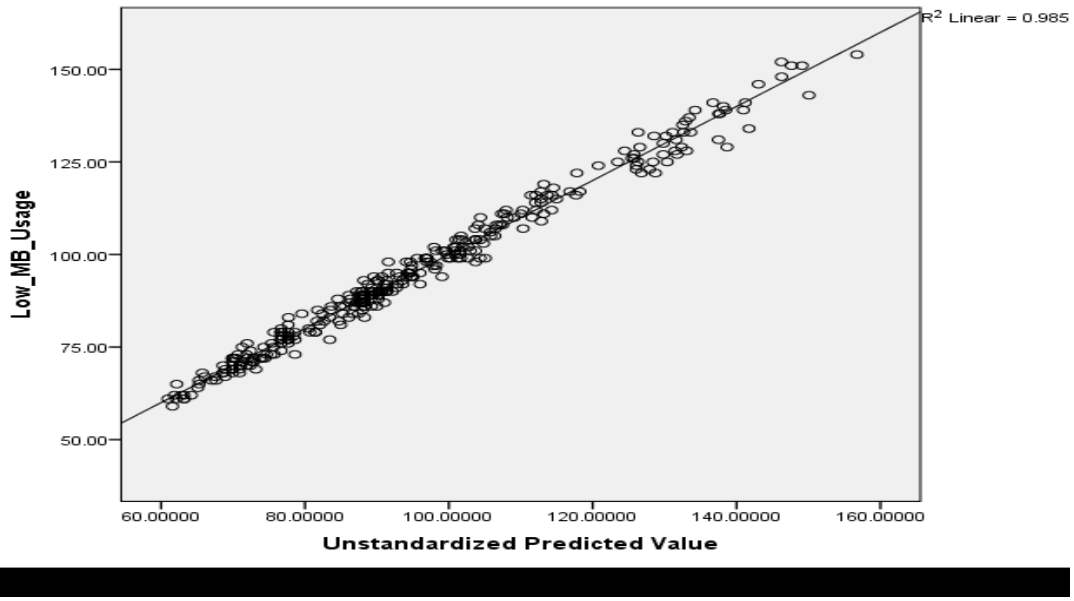

Figure 2: Linearity assumption scatter plot

Taking other variables constant, Low mobile banking has linear relationship with all variables as shown in the scatter plot line. The low mobile banking usage which is dependent variable has 0.985 linearity relationships with all independent variables together. The chart is made by analyzing all independent variables multiple regression linear relationship to calculate unstanderdized predicted value. Finally the multiple variables linear relationship is tested by drawing scatter plot between the unstanderdized predicted value and the dependent variable which is low mobile banking usage.

4.2.1.1. Multicollinearity Assumption

In testing regression analysis, the presence of multicollinearity implied that there is low redundancy of information in the model in which it minimizes unstable coefficient estimates of regression analysis (Noora 2020). The average correlation between all independent variables is less than 0.9 which is maximum tolerance value. As shown in the table, the independent variables in the study such as complexity=.137; lack of awareness=.153; trust=.177, network interruption=.595, Compatibility=.147, and security issues=.307which are all less than 0.9. The results are significant that the correlation regression between the variables do not undermine the statistical significance of an independent variable.

Coefficients[a]

Model		95.0% Confidence Interval for B		Collinearity Statistics	
		Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	7.651	10.659		
	Complexity	1.058	1.489	.137	7.313
	Awareness	.919	1.309	.153	6.530
	Trust	.875	1.234	.177	5.665
	Network_Intrruption	.805	1.114	.595	1.680
	Compatibility	1.148	1.535	.147	6.803
	Security	.850	1.173	.307	3.256

a. Dependent Variable: Low_MB_Usage

Table 14: Collinearity Statistics table

4.2.2.2. Autocorrelation Assumption

Autocorrelation is a mathematical representation of the degree of similarity between a given time series and a lagged version of itself over successive time intervals. It's conceptually similar to the correlation between two different time series, but autocorrelation uses the same time series twice (Huitema & Laraway 2006).

To test the autocorrelation, the Durbin-Watson model has been used which shows more than 1 which indicates positive autocorrelation which is the correlation between the variables at the study time will have positive correlation in the future.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.993[a]	.985	.985	2.58034	1.762

a. Predictors: (Constant), Security_, Network_Intrruption, Trust, Awarness, Compatibility, Complexity

b. Dependent Variable: Low MB_Usage

Table 15: Durbin –Watson model summary

4.2.2.3. Normality Assumption

Normality tests are used to determine if a data set is well-modeled by a normal distribution and to compute how likely it is for a random variable underlying the data set to be normally distributed (Ghasemi 2012). In this study, normality tests are used to determine if a data set is well-modeled by a normal distribution and to compute how likely it is for a random variable underlying the data set to be normally distributed. It is the random error in the relationship between the independent variables and the dependent variable in a regression model. Each case in the sample actually has a different random variable which encompasses differences in the observed and predicted values produced by a regression equation, and it is the distribution of this disturbance term or noise for all cases in the sample that should be normally distributed. As shown in the normality histogram, it shows the relationship between the independent variables and the

dependent variable in a regression model regression model are normally distributed.

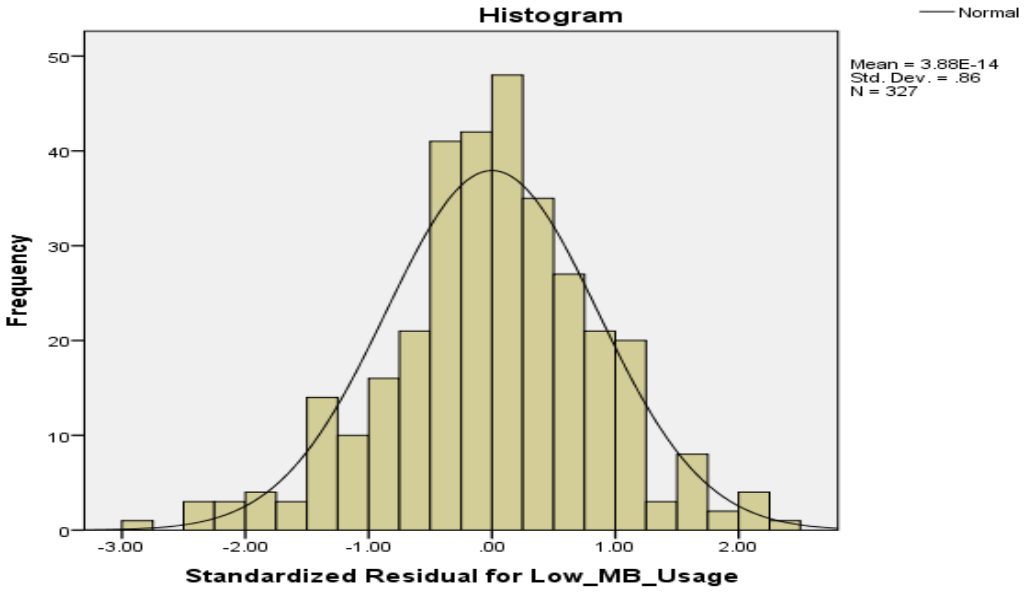

Figure 3: Normality Histogram

4.2.1.4. Homoscedasticity Assumption

In multiple linear regressions homoscedasticity indicates scatter plot of residuals versus predicted values are more or less on the regression line (Yang, Justin, and Tian Chen 2019).

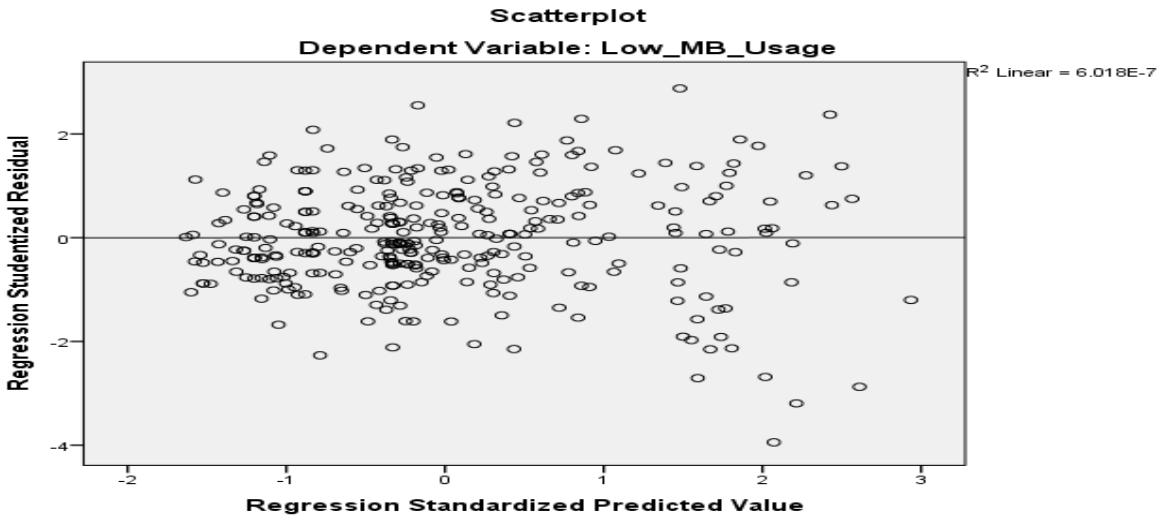

Figure 4: Homoscedasticity Scatterplot

As shown in the chart below, the standardized residual value for low mobile banking in Jimma town, the assumption of homoscedasticity in multiple linear regression has been met because the

expected value for low mobile banking and the residual values are more less on the regression line and the scater plot doesn't show cone shape which is Hetroscedasticity. The scatters are largely condensed. The samples taken to study factors affecting mobile banking have the same variance, if they came from different populations.

4.2.3. Hypothesis Testing Using Multiple Regressions

To make a proper decision regarding the relationships between the variables, regression analysis has been used to test the hypothesis for the independent and dependent variables. This section discusses detail analysis of the results for each independent variable and their significance in influencing mobile banking usage.

Regression analysis was performed in order to examine the degree to which factors affecting usage of Mobile banking such as Complexity of the service, lack of Awareness, trust on the service, network interruption, compatibility of the service to the customers' interest, and security issues could explain usage of mobile banking.

This research hypothesized that the variable or factors affecting usage of mobile banking have no actual relationship with the dependent variables which is low mobile banking usage. Prior to testing, it was hypothesized that all six variables have no direct relationship. According to (Kabir 2016) the null hypothesis is a typical statistical theory which suggests that no statistical relationship and significance exists in a set of given single observed variable, between two sets of observed data and measured phenomena. Basically, null hypothesis (H0) in the study indicates that there is no exact or actual relationship between the independent variables which are complexity, lack of awareness/poor awareness creation/ trust on the eservice, network interruption, compatibility and security issues while the research was designed to assess the alternative hypothesizes (H1) is true that the variables affect the usage of mobile banking users of commercial bank of Ethiopia in Jimma town.

Since the null and alternative hypotheses are contradictory, the researcher examined evidence based on multiple regression analysis to decide if there is enough evidence to reject the null hypothesis and accept alternatives hypothesis based on 5% significance level.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.990[a]	.983	.986	2.02312

a. Predictors: (Constant), Security_Risks, Network_Intrruption, Trust, Awareness, Compatibility, Complexity

Table 16: Multiple regression Model Summary variables

As indicated in the model summary R square of 0.983 and adjusted R square of 0.986 with standard deviation of 2.0. It measured the proportion of the variation in the dependent variable (mobile banking usage) explained by the independent variables for a linear regression model used while the adjusted R-squared showed the adjusted data based on the number of independent variables in the model. Furthermore the standard deviation shows indication of 2.0 deviations from the responses from the mean.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	142563.676	6	23760.613	3732.350	.000[b]
	Residual	2018.062	317	6.366		
	Total	144581.738	323			

a. Dependent Variable: MB_Usage

b. Predictors: (Constant), Security_Risks, Network_Intrruption, Trust, Awarness, Compatibility, Complexity

Table 17: ANOVA Table

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.072	.749		12.113	.000
	Complexity	1.263	.107	.211	11.779	.000
	Awareness	1.104	.097	.193	11.387	.000
	Trust	1.053	.089	.186	11.797	.000
	Network_Intrruption	.979	.077	.109	12.697	.000
	Compatibility	1.348	.096	.242	14.006	.000
	Security	1.021	.080	.152	12.709	.000

a. Dependent Variable: Mobile_Banking_Usage

Table 18: Multiple regression of dependent and independent variables

4.2.3.1. Complexity

As shown in the table, the inferential analysis shows that positive β(beta) that indicates as the value complexity variable increases by 0.211 and P-value is 0.0000. Holding other explanatory variables constant complexity has a positive and statistically significant effect on usage of mobile banking. This research finding is consistent with the study of (Ebisa, 2020) that found out positive association between perceived ease of use and mobile banking usage. The study also aliened with (Alkhaldi 2017) that stated complexity as the largest and one of the major variables affecting mobile banking. The data indicated positive relationship between complexity and low mobile banking usage; in which customers response in various ways also indicates that increase in difficulty on ease of use affects overall mobile banking usage.

4.2.3.2.Lack of Awareness

As indicated in the table, the multiple linear regression between lack of awareness and low mobile banking usage β(beta) value is 0.193 and P-value is 0.0000. Holding other explanatory variables constant, awareness has a positive and statistically significant effect on usage of mobile banking. The result is supported by (Amin et al. 2008) in (Alsaab 2009) that indicates lack of m-banking use is due to the lack of awareness about the services which involve knowledge of the existence and usage of m-banking system and its benefits. (Lee, Mattila, and Shim 2007) also found out that lack of knowledge and perceived risk contribute to resistance of M-banking use. Hence, as the

inferential analysis and other literatures show, direct relationship between awareness and mobile banking usage.

4.2.3.3.Trust on the service

Regarding trust, (Ramos, 2017) indicated Low level of trust affects mobile banking service users that they do not prefer to choose it over the counter service. As indicated in the table 17, the beta coefficient trust on the service delivery and low mobile banking usage is 0.186 and P-value is 0.0000. Holding other explanatory variables constant trust has a positive and statistically significant effect on usage of mobile banking. The result shows that customers do not trust the service delivery system that it fulfills all the obligations expected. Likewise, Ayana (2012) in (Ebisa 2020) indicated lack of trust on the use of technological facility provided by bank as a factor that can hinder adoption of mobile banking by Ethiopian banking industries.

4.2.3.4. Network interruption

As indicated in the table, the regression table indicates that network interruption has positive relationship with low mobile banking usage. The relationship between the independent variable and the dependent variable is 0.109 and P-value is 0.0000. Holding other explanatory variables constant, network interruption has a positive and statistically significant effect on usage of mobile banking. Network interruption leads customers not to complete their transaction in which they do not prefer it in other times. Mobile banking requires and uses a lot of data, which is why some banks have even offered to cover data charges for customers using their online platforms. (Abel 2020) also indicated that Network interruption as a factor variable that has significant marginal effect on the possibility for the mobile banking users. (Ebisa 2020) also indicated less telecommunication infrastructure, or inability to withstand the data volumes minimizes intended service to be rendered.

4.2.1.5. Compatibility

Compatibility is one of the independent variables studied if it has strong relationship with low mobile banking usage. The inferential analysis showed that the relationship between compatibility and mobile banking usage is 0.242 and P-value is 0.0000. Holding other explanatory variables constant compatibility has a positive and statistically significant effect on usage of mobile banking. It indicates as the value of compatibility variable increases by 0.242, the mean of mobile banking usage also tends to increase taking other things constant. Compatibility involved interest of the

customers, prior experience, habits and values of the customers and environment they work and live. The result is also supported by (Al-Gahtani 2003) that compatibility has positive correlation with mobile banking adoption and use. (Rogers 1983) on his side, indicated the issue as the degree to which an innovation is perceived as being consistent with the existing values, past experiences and the needs of potential adopters.

4.2.1.6. Security

The study involved security risks as one of the major variables that affect low mobile banking usage. The result indicates that there is positive relationship between securities problems. The regression analysis between security issues and mobile banking usage rate is 0.152 and P-value is 0.0000. Holding other explanatory variables constant, security has a positive and statistically significant effect on usage of mobile banking. The security issues occurs when customers are worried that other can see their personal financial information without their consent and this concern creates security risk, which consecutively affect the adoption of mobile banking apps (Hayat 2017). Effect of security is also indicated by (Alkhaldi 2018) that showed that Perceived risk has been measured as a crucial variable in the use of mobile services. Security becomes a real challenge for banks to provide information security because users like to control all aspects of gathering information while using online services.

4.2.1.7. Demography

As per the demographic analysis, the result revealed that younger age group is higher users having the highest frequency as indicated in (Abayom et al 2009). As revealed by Azouzi (2018), the finding also showed that male users are better adopters than female ones. The result also indicated that higher educational level users are more close to adoption than illiterate user. Similarly Jimma town government workers are voluntary to adopt and use mobile baking as compared to private organizations'.

4.3. Discussion of Results

The study conducted to assess factors affecting mobile banking usage by collecting information from mobile banking users and CBE workers. The demographic statistics indicated that majority of the responders are male Mobile banking users. The data indicated young users which are in the age category of 21-30 take the highest number followed by age category between 31 and 40. The study involved higher married users of which majority of them are government office workers followed by self employed users. Most of the responders are degree holders while the next higher number is high school complete

Regarding work experience, majority of the officers working in electronic banking in CBE have three to five years of experience followed by two to three years experience workers. Employees know how the subject is critical to any organization. As (Berens 2013) indicated dedicated and meaningful work enables employees to realize how valuable they are within the organization and makes them engaged. These workers have stayed on the service for the same years of experience. Their assignment on mobile banking and related service, functional level, accountability and other issues, respondents replied that they are assigned just from other banking service activities without proper special training. This assignment doesn't make all electronic banking ineffective as the employees lack ability to handle related problems which require special skills. Most of the employees are not accountable to users' services once they are listed as mobile banking users. Employees' assignment and their mobile bank customers' management are extremely poor which doesn't attract customers to use more.

Regarding accessibility questions, responders' response indicated that majority of them do not have internet access in their mobile which doesn't lead them use mobile apps to advanced mobile banking service. Accessibility of digital banking, particularly mobile banking has to do with the ease with which customers have access to financial tools, their accounts, ease of making payments from their accounts and access to money that is available in the accounts using various digital channels (Kevin, Muluka , Munyolo , and Oteki 2015). The response also indicated that customers have cell phone that enable mobile banking service delivery as mobile banking can be accessed through simple mobile network by any level of mobile. Customers refused that access to

information about mobile banking is very limited. Once the service right is granted, no other supporting information is given by CBE workers.

Regarding mobile banking usage, majority of the customers response indicated that they do not always use mobile banking though they have right to use it. Customers do not prefer to use mobile banking due to various reasons, instead of going bank branches for service. These problems minimized their mobile banking usage service as they do not believe it satisfies them. The data analysis on low mobile banking usage indicates that customers do not always use mobile banking when they need it. Instead they prefer to go to banking branches for any transaction they want. One of the low preferences to use mobile banking is low interest to transact through mobile banking.

Regarding complexity of the service, majority of the respondents denied that getting mobile banking service is not easy to adopt. The data also showed that it is not convenient to use mobile banking as it is difficult to understand in which the bank doesn't provide additional manuals. Complexity in use is a major factor in usage of mobile banking in which researchers suggest that users' intention to use mobile banking is inhibited by the perceived complexity of the innovation. The result is also indicated by (Ebisa, 2020) who found out positive relationship between complexity and mobile banking usage. Furthermore, (Alkhaldi 2017 & Lin 2011)also indicated much of the extant literature on barriers of mobile banking usage is predominantly related to technical complexity.

The data statistics showed that awareness focused responses indicated positive reaction which can directly affect growth of mobile banking. Customers reacted that CBE doesn't fulfill requirement to necessary information and usage procedures. The other indicator for awareness gap in mobile banking usage is low benefits and lack of user guideline showed significant effect in the response. In order to be attracted to the service, majority of the respondents showed weak distribution of promotion materials to the public. As the inferential analysis which indicated awareness affect mobile banking usage rate; (Alsaab 2009 &Alkhaldi 2017) also discovered low m-banking use is due to the lack of awareness that would increase user awareness of how m-banking services work and what benefits such services offer and helps build users' trust. (Lee, Mattila, and Shim 2007) study also indicated lack of knowledge and perceived risk contribute to resistance of M-banking use.

Regarding trust factors, customer response indicates that they do not get necessary service they expect, and integrity issue is not guaranteed which increases high level of confidence to use the service. The data also indicates that customers feel unconfident that the bank only works to maximize its profit and neglects the required service and protections. According to (Misuraca 2007), service design affects customers trust in mobile technology through ease of use, perceived usefulness and customization. Usage of mobile baking can affected due to customers' expectation, integrity and vulnerability to theft. Trust is believed to be an important antecedent of digital financial systems, such as m-banking (Ramos 2017). The inferential analysis also indicated that there is positive relationship between trust on the service and low mobile banking usage which showed increase on low level of trust results that increase low mobile banking usage rate.

Respondents' reaction to compatibility which deals about the interest involving value and beliefs of the mobile banking users showed disagreement that CBE Mobile banking is compatible. Compatibility to Customers ways of life affects usage of mobile banking. The respondents showed that they less believe it fits to the way live and want to live. In addition value, habits and experiences of the users, customers also want mobile banking should be compatible to their mobile devices whether it is smart or not. Compatibility is refers that an innovation is more likely to be adopted when it is compatible with an individual's job responsibilities and value system (Agarwal and Prasad 1998).The inferential analysis also indicated that there is positive relationship between compatibility and low mobile banking usage rate which shows increase in weak compatibility results in increase on low mobile banking usage. (Al-Gahtani 2003) also found that compatibility has significant correlation with mobile banking adoption and use.

The data indicates customers reacted negatively towards network interruption variable which can affect usage of mobile banking. They indicated that they are not getting the service whenever they require is difficult because of the interruption. The result also indicated those customers are not confident on mobile banking to use the service as it interrupts repeatedly. Network availability is curial in rendering mobile banking service. As the descriptive data indicates, customers are not confident towards network availability. Majority of the responses show poor network infrastructure as customers intend to use mobile banking. As indicated by (Ebisa 2020), network interruption is one of the major factors affecting usage of mobile banking; if telecommunications infrastructure is less than stable, or unable to withstand the data volumes generated by app users.

The inferential statistics showed positive relationship between network interruption and low mobile banking usage rate in which increase in network interruption is a factor for increase on low mobile banking usage rate.

Customer's response on the security issues indicated that they do not feel confident that technological advances do not make it safe to use mobile banking. As security issue need legal coverage, customers require legal coverage for risks they face. Hence, the respondents indicated that they do not feel assured for legal structures adequately protect them from problems associated with using mobile banking service. They also indicated that mobile banking doesn't safe guards them to feel comfortable in using it. Regarding manipulation of the customers bank account, majority of them are not confident that other have no chance to manipulate their bank account information through their mobile banking service. Security risk is mainly the risk that user's account information can be compromised and used in a manner which can cause some tangible or intangible damage/loss to the account holder (Hayat 2017). The inferential analysis also indicated that their relationship between security issues and low mobile banking usage which shows increase security concerns results on increase on low mobile banking usage rate to increase in the same rate. Security risks occur when customers are worried that other can see their personal financial information without their consent and this concern creates security risk, which consecutively affect the adoption of mobile banking apps.

Open ended questions indicated that there are various problems that hinder them not to use mobile banking. Complexity, lack of awareness, trust issues, compatibility, network interruption and security issues. The major problem is network problem. Many times they start to have transitions, the system fails which affects their confidence next time they require the service. The other problem is lack of receipts which helps for reconciliation reasons. Barrier to functional capacity of mobile banking usage occurs when an innovation does not comply with current trends, customs, or habits (Rogers 2010). Mobile banking is feared to be not secured which is accessed by various hackers located in various countries. The system locks as customers try three times wrong login in which most of them do not request for reset. Respondents also indicated that they do not trust mobile banking due to system failure and security reasons. They feel that employees support after first introduction is poor which doesn't invite them to request for extra support. Sometimes, customers mistake is not reversed which affects their transaction interest.

CBE employees feel that Mobile banking simplifies banking service. It helps customer get the service wherever they are. They feel that various variables affect usage of customer readiness to get awareness and fear of security affect usage level. They think that customer's cell phone type doesn't affect usage of mobile banking as it can be rendered through USSD. Responders think that poor network infrastructure also affects usage of mobile banking interruption times disappoint users.

Regarding effectiveness of Mobile banking usage, majority of the responders believe that the service is not effective as compared to registered customers. Responders consider that current way of mobile banking delivery do not increase usage rate; because majority of the activation is made just because of the plan not to maximize the user rate in terms of transaction. As indicated in (Hayat 2017), mobile banking is not effective as compared to banks objectives.

Regarding additional efforts and infrastructure required for mobile banking effectiveness, Employees suggest the bank should work with Ethiotelecom to enhance network capability; and employees of the bank better work to support customers to increase their user rate.

Customers indicated using mobile banking is incomparable with going to banking branches for service every time. However, there are various problems that hinder them not to use. The major various problems affect their usage of which network interruption affect their transactions. The other problem is lack of receipts which helps for reconciliation reasons. Mobile banking is feared to be not secured which is accessed by various hackers located in various countries. Respondents also indicated that they do not trust mobile banking due to system failure and security reasons. Customers feel that employees support after first introduction is poor which doesn't invite them to request for extra support. Sometimes, customers mistake is not reversed which affects their transaction interest.

Regarding demographic factors, the result found out that customers, age, gender, educational level and occupation also influence, mobile banking adoption and usage that younger age group is relatively capable of technology acceptance while male customer are willing to try new trends than female. Educational level also affects technology acceptance that highly educated and government workers customer understand and willing to accept mobile banking as a new trend.

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATION

5.1. Conclusion

The study focused on factors affecting usage of mobile banking usage. Hence, the researcher collected the data hypothesizing complexity, lack of awareness, trust, compatibility, network interruption and security issues have direct relationship with low mobile banking usage. Based on the descriptive and inferential analysis conducted, the researcher concluded the result in such a way.

Employees' assignment and their mobile bank customers' management is extremely poor which doesn't attract customers to use more as the employees lack necessary skills and knowledge to support customers.

Accessibility to internet and smartness of mobile phone status do not affect mobile banking usage as it can be delivered through USSD using mobile network which works in any type of mobile phone.

Customer do not prefer mobile banking instead of going bank branches as they do not feel that using mobile banking is easy.

Complexity affects usage of mobile banking that customers do not feel mobile banking service is easy to use. Customers do not believe that it is simple to quickly finish the service as quick as they require.

Lack of Awareness affects usage of mobile banking that CBE doesn't fulfill requirement to necessary information and usage procedures. The other indicator for awareness gap in mobile banking usage is lack of user guideline and various broachers and multilingual promotion materials.

Security and privacy are obstacles in adoption and usage of electronic based banking activities. Customers prefer to use those facilities which they believe to be secured from some believable

source. People generally think about the trustworthiness of communication network and then about the service provider.

Compatibility affects usage of mobile banking that it is rare that CBE mobile banking is compatible to ways of life that affects usage of mobile banking. Customers do not believe the service fits to the way they live and want to live. The service doesn't consider value, habits and experiences of the users, customers also want mobile banking should be compatible to their mobile devices whether it is smart or not.

Low internet capability is one of the factors affecting mobile banking usage. Customers rarely get the service whenever they require because of the interruption. Repeated interruption on network decreases customers' confidence to use mobile banking as much as they need it.

Customers do not feel confident that technological advances do not make it safe to use mobile banking. There is no clear indication about legal coverage for risks such as manipulation of bank account information through their mobile banking service.

Generally, Complexity, lack of awareness, trust issues, compatibility, network interruption and security issues are factors affecting mobile banking usage. Network problem affect transactions that the system fails which affects their confidence next time they want the service. Mobile banking is feared to be not secured which is accessed by various hackers located in various countries. Customers do not trust CBE mobile banking service due to fear to get expected service, integrity issues and the banks' goal to deliver the service merely focusing on profit.

Mobile banking usage is not effective as compared to registered customers. Most of the customers do not use the service once they get the service. Responders consider that current way of mobile banking delivery do not increase usage rate because majority of the activation is made just because of the plan not to maximize the user rate in terms of transaction.

Demographic factors such as age group, gender, occupation and educational level affect adoption and usage of mobile banking.

5.2. Recommendations

The study concluded the variables relationship with low mobile banking usage. Hence, based on the conclusion derived, the following recommendations are given:

It is recommended that commercial bank of Ethiopia works in shortening transaction process to solve complexity problem using simple application that does not require internet data. For instance, the bank can design only two inputs' menu to transfer.

The bank is recommended to overcome awareness problems by forming information desk team that works in distributing promotion materials, prepare guidelines, and forward updated services.

It is believed that information is one of the very important things to aware customers to clarify available concerns on trust issues such as ways to protect customers' information, integrity issues, unnecessary perception like profit based activities, and expectations in which the bank is recommended to give the responsibility to the information desk team.

It is recommended to overcome compatibility issues in which customers require services that fit to their value, habits and experience by customizing users menu.

The bank is recommended to provide legal certificate to customer that assure them for security treaties that helps them use the service with full confidence.

Network capability is very important in digital banking service, particularly mobile banking. Hence, the bank should deal with Ethiotelecom or upcoming operators to get enough network line with backup servers to minimize network interruption while using mobile banking.

The bank is recommended to conduct follow up on user accessed customers to assess to what extent they are using the service to improve problems before they affect overall usage rate.

The bank is recommended to work on service quality rather than focusing only on number of users that doesn't guarantee the banks digitalization strategy by giving necessary support to customers and work on problem solving.

The bank is recommended to prioritize demographic factors such as younger age group, educated individuals and government workers.

5.3. Limitations and Future Research Suggestions

Like any other research, the study faced some limitation while processing the research. The research conducted in Jimma town which represented all commercial bank of Ethiopia branches throughout the country. Some customers were not voluntary to respond and some gave irresponsible response which is not related to the questions.

This study may not have exhausted all the factors that affect usage of mobile banking. Various systems related, service related and customers related factors can be studied. Therefore, it is recommended to investigate to support effectiveness of mobile banking. Further, it is believed that mobile banking and internet banking have common features except necessity of internet access and accessibility of the service out of the country. Thus, studying both channels of banking service with wider data collection and geographical area to basically find available problems is important. Future researchers are recommended to incorporate the common features and challenges for future improvement. It is believed that more organized and wider scope study on the issue will help banks to insure their goal of digitization in adopting technological innovations to achieve their goals and visions of branchless banking.

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APPENDIX

QUESTIONNAIRE

Dear respondents,

This research is aimed to assess factors affecting mobile banking usage in commercial bank of Ethiopia in Jimma town. The idea emanated from resistance of the public to use electronic banking in recent times in all banks. One of the major electronic banking is mobile banking which is used by all levels of customer having any kind of phone. Assessing factors affecting its adoption will help for solving the problems.

Hence, your active and honest participation in responding the questionnaire will contribute to the effectiveness of the research at the end.

Thank you for your cooperation!

General Instructions

The questionnaire has open and close ended questions. Put thick mark in the box for all close ended questions and write the understanding you have on open ended questions.

Part I: Demographic Factors

1. Gender

   Male ☐ Female ☐

2. Age

   Under 20 ☐ 21-30 ☐ 31-40 ☐ 41-50 ☐ 51 years and over ☐

3. Marital status:

   Married ☐ Unmarried ☐

4. Employment

   Self employed ☐ Government worker ☐ Not employed ☐

5. Literacy status

   Literate☐ Illiterate ☐

6. Education back ground

   Master/PHD ☐ Degree ☐Diploma ☐ high school complete ☐

Part II : Mobile banking usage

7. Do you have an Internet access your mobile phone?

   Yes ☐ No ☐

8. Do you have an Access to cell phone that enables Mobile banking?

   Yes ☐ No ☐

9. Do you have access to read about mobile banking?

   Yes ☐ No ☐

II. Please respond to the questions related to mobile banking usage rate

	Mobile banking usage rate	S. Agree	Agree	Neutral	Disagree	Strongly Disagree
1	I always use mobile banking					
2	I prefer mobile banking than going to bank branches					
3	I am interested to use MB					
4	I have access to MB					
5	Mobile banking fulfills necessary service I need					

Part II. Close ended questions about factors affecting mobile banking usage

i. **Please give your answer regarding complexity of mobile banking usage**

	Complexity of the usage	S. Agree	Agree	Neutral	Disagree	Strongly Disagree
1	M-banking makes banking easier to do banking activities					
2	M-banking enables me to do banking activities more quickly					
3	M-banking enables one to complete banking activities more conveniently					
4	M-banking allows one to manage banking activities more efficiently					
5	I think it is easy to learn how to use M-banking					

ii. Please give response that assesses your awareness on mobile banking usage

No.	**Awareness of Mobile banking services**	S. Agree	Agree	Neutral	Disagree	Strongly Disagree
1	I receive information about M-banking services from my bank					
2	I receive enough information on how to use M- banking services					
3	I receive enough information about the benefits of M- banking					
4	The bank gave me guidelines to use mobile banking					
5	There are enough broachers and teaching materials about mobile banking in CBE in different local languages					

iii. Please give response that assesses your trust on mobile banking usage

No.	**Trust on mobile Banking usage**	S. Agree	Agree	Neutral	Disagree	Strongly Disagree
1	I feel that CBE delivery the service I expect					
2	I do not fear about integrity of CBE mobile banking usage.					
3	I do not fear to transact on mobile banking					
4	I have never heard loss on customers balance through mobile banking					
5	I believe that CBE MB is not designed for only profit purpose.					

iv. Please give your response regarding network interruption

No.	**Repeated network interruption on mobile Banking Usage**	S. Agree	Agree	Neutral	Disagree	Strongly Disagree
1	CBE Mobile banking helps me use the service whenever I wanted					
2	CBE mobile banking service works without interruption					
3	I am confident on CBE mobile banking network					
4	Mobile Banking service is not interrupted in when I use it.					
5	I am confident that CBE Mobile banking service is always online.					

v. Please respond to questions regarding compatibility

No.	**Compatibility on Mobile Banking Usage**	S. Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Mobile banking is suitable with my interest					
2	Mobile banking is suitable with my work habits and environment					
3	Mobile banking is compatible to the way I live want to live.					
4	Mobile banking is compatible to my mobile device					
5	Mobile Banking is compatible with my experience					

vi. Please respond to the questions regarding your fear of security

No.	**Fear of Security on Mobile Banking Usage**	S. Agree	Agree	Neutral	Disagree	Strongly Disagree
1	I feel confident that technological advances makes it safe for me to use Mobile banking					
2	I feel assured that legal structures adequately protect me from problems associated with using M- banking services					
3	M-banking has enough safeguards to make me feel comfortable using it					
4	I am confident that others have no chance to manipulate my bank account information through my mobile banking service					
5	CBE MB is free from security risk					

Part III. Open ended questions for Mobile banking Users:

1. What is your attitude towards using mobile banking?

   ……
   ……

2. How do you think mobile banking usage will be improved in the future?
   ……
   ……
3. What do you expect from the bank to make your mobile banking usage will be more simple and compatible to use?
   ……
   ……
4. How do you think the bank's mobile banking service network capability?
   ……
   ……

Part IV. Interview Questions for bankers

1. What is your position in the bank?
   Management ☐ Business officer ☐ IT officer ☐
2. How long have you worked in the bank?
   Less than 1 year ☐ Two to three years ☐ 3-5 years ☐ More than 5 years ☐
3. How long have you worked in the current position?
   Less than 1 year ☐ Two to three years ☐ 3-5 years ☐ More than 5 years ☐
4. Kindly explain how Mobile is structured in your institution in terms of assigned employees, functional level, accountability, and others
   ……
   ……

5. Please respond to the following factors that can affect your banks mobile banking usage rate

No.	Factors affecting mobile banking usage	S. Agree	Agree	Neutral	Disagree	Strongly Disagree
1	CBE MB usage rate is high					
2	Customers trust on MB is high					
3	Confidence level on security of mobile banking in terms of technology, theft and fraud High					
4	Compatibility of the system to customers' phone, values, habits and experience is high					
5	Complexity of the system in terms of simple use, convenience and simplicity to solve problems is low					
6	Level of good network for mobile banking users that is not interrupted					
7	Information Provided by the bank is enough to attract and increase usage rate					

Open ended questions for bankers

1. What do you feel about effectiveness of mobile banking usage?

   ……

   ……

2. Do you think that current way of mobile banking delivery increase its usage rate? If not, how do you feel be better way?

   ……

   ……

3. What additional efforts and infrastructures are required for mobile banking effectiveness?

   ……

   ……

Thank you for your genuine response!