ASSESMENT OF CHALLENGE AND PROSPECTS OF MOBILE BANKING IN COMMERCIAL BANK OF ETHIOPIA IN WOLKITE BRANCH

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WOLKITE, ETHIOPIA

Abbreviation

M-Banking – Mobile Banking

M-Money – Mobile Money

E-Commerce – Electronic Commerce

E-Payment – Electron Payment

CBE – commercial Bank of Ethiopia

NBE – National Bank of Ethiopia

E-Banking – Electronic Banking

SPSS – statistical Package for social science

IS – Information System

Abstract

This paper focused on assessment of challenge and prospect mobile banking in commercial bank of Ethiopia and would be use Mixed research approach which is both qualitative and quantitative. The design of the study was descriptive type. In order to undertake the study, the researcher used non-probability sampling design, purposive sampling for the employees and convenience sampling for customers to select respondents. 15 employees and 27 users were selected totaling the sample size 42. In order to collect sufficient data so as to answer the research questions the researcher used data collection instrument like; questionnaire to get quantified results. In this study structurally designed questionnaire was used. The findings of the study revealed that adoption and development of M-banking technology in CBE Wolkite branch stretches wide across the two extremes of the challenges and prospects where the concerted effort by stakeholders to overcome the challenges will bring about immense opportunities to the dominant players in the field with the ultimate result. The Bank should create deep awareness to community concerning the M-banking products in accordance with the conclusion and recommendations.

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CHAPTER ONE

1. INTRODUCTION

1.1 Background of The Study

The spread of mobile technology across the globe is one of the most remarkable achievements in the last decades. Mobile phones have increasingly become tools that consumers use for banking, payments, budgeting and shopping. Advance in mobile technology have revolutionized almost every facet of society, from information to education granting enhanced access to an ever growing number of people (Kalkidan, 2006).

According to Petrova K. (2002) M-Banking can be defined as the ability to conduct bank transactions via a mobile device, or more broadly to conduct financial transactions via a mobile terminal. This definition is a suitable working one as it includes not only basic services such as bank account statements and funds transfer but also electronic payment options as well as information based financial services e.g. alerts on account limit or account balance, access to stock broking (NBE Birritu no,119, 2008).

Commercial banks are exploring this avenue to make their services more convenient for their customers. The growing number of mobile subscribers in the country forms the most valuable support base for the growth and success of mobile banking. Developments in the banking sector as indicated with increased competition on account of technological developments coupled with the process of globalization have produced new challenges for banks. Hence, the study attempted to explore the major challenges facing m-banking outreach and identify the existing opportunities for creating inclusive financial system through mobile banking.

1.2 Statement of The Problem

When compared with the banking industry operated in developed country, without doubt the banking industry in Ethiopia is underdeveloped and therefore, there is an all immediate need to embark on capacity building arrangement and modernize the banking system by employing the technologies being used elsewhere in the world. Over the year's traditional branch based retail banking remained the most widespread method for conducting banking transactions in Ethiopia. Currently commercial banks in Ethiopia have started adoption of mobile phone

based electronic banking systems to improve their operations and to reduce costs (Kalkidan, 2006).

Even though in their efforts of introducing new ways of reducing cost, modernizing the banking system, adoption of new technologies and trying to develop the m-banking outreach, according to (NBE Birritu no,119, 2008) there are still major challenges hindering m-banking systems from fully functioning and being effective and efficient regarding reaching its stated goals in commercial banks of Ethiopia (Kalkidan, 2006) . Therefore, this study aimed at filling that gap by assessing the issues that influence customer's usage and identified the existing opportunities, challenges and benefits for creating inclusive financial system through M-banking.

Research Question

- Based on the above statement of the problem the research question is stated as: -

1) What are the challenging factors influencing for the usage of mobile banking in Wolkite CBE?
2) What are the benefits realized by adopting mobile banking?
3) What are the driving forces for the usage and adoption of mobile banking in Ethiopian banking sector?

1.3 Research Objectives

A research objective is a statement of specified goals that the researcher plans to achieve in the study. In other words, it was the summary of what is to be achieved by the study.

1.3.1 General Objective

The general objective of the study was to assess the challenges and prospects of mobile banking in Wolkite, commercial bank of Ethiopia particularly, with the following specific objectives.

1.3.2 Specific Objective

The specific objectives of the study are: -

- To examine the challenges of using mobile banking
- To examine the benefits of using mobile banking
- To assess the efficiency and effectiveness mobile banking on the performance to CBE
- To analyze the current status of mobile system in CBE

1.4 Significant of The Study

This study is expected to fill the gap stated above and to contribute in better understanding of the mobile banking system used in Ethiopian context and in general giving awareness to users while letting the providers understand from the user's perspective.

The major significance of the study will be: -

- To provide knowledge for improving the services
- Will be useful for banking management to understand the factors influencing the adoption of mobile banking service.
- It will be useful for researchers for further study in similar case areas.
- It will give general overview to the reader about the significance of mobile banking service in improving the banking industry.
- It will give current information about mobile banking system in Ethiopia specially in commercial bank of Ethiopia context.

1.5 Scope of The Study

The introduction and use of mobile banking system highly depends on the development of e-commerce meaning e-payment which is currently at a startup stage but could play the major role in the banking industry. Therefore, this study focused on the challenges and prospects of m-banking in commercial bank of Ethiopia in Wolkite branch at Wolkite city. Regarding this it might not be used to generalize the findings of this research to all branches and districts of the commercial bank of Ethiopia and it is not possible to include all factors regarding the challenges as well as benefits of mobile banking in one study. so, selected factors will be considered to this study.

1.6 Limitation of the study

The limitation of the study was the lack of various previous studies in Ethiopia around the mobile banking factors. And also it was not possible to include all factors that affect usage of mobile banking in one study only selected factors were considered for the study. The other limitation is unwillingness of respondents. Because of the scope of the study and the case area that the study was conducted, which is “in Wolkite city”, it is difficult to generalize the findings of the research to all branches and districts of CBE.

1.6 Organization of The Paper

The paper consisted five chapters. The first chapter deals with the introduction part and consists of background of the study, statement of the problem, research objectives, significance of the study and organization of the paper. The second chapter deals about literature review. The third chapter deals with research methodology consisting research design, sample design, survey design, and data analysis methods. The fourth chapter focused on data analysis and interpretation and chapter five will contain conclusion and recommendation.

CHAPTER TWO

2. LITRATURE REVIEW

Theoretical review

2.1 Definition of Mobile Banking

The Federal Reserve survey defines mobile banking as "using a mobile phone to access your bank account, credit card account, or other financial account. Mobile banking can be done either by accessing your bank's web page through the web browser on your mobile phone, via text messaging, or by using an application downloaded to your mobile phone." Mobile banking is an application of mobile commerce which enables customers to access bank accounts through mobile devices to conduct and complete bank-related transactions such as balancing cheques, checking account statuses, transferring money and selling stocks (Kim et al. 2009; Tiwari and Stephan 2007). Luo, Li, Zhang and Shim (2010), defined mobile banking as an innovative method for accessing banking services via a channel whereby the customer interacts with a bank using a mobile phone.

Mobile banking also means performing banking activities which primarily c onsist of opening and maintaining mobile/regular accounts and accepting deposits; furthermore, it includes performing fund transfer or cash-in and cash-out services using mobile devices (NBE Directive, FIS-01-2012). In the broader sense mobile banking enables the execution of financial services in the course of which – within an electronic procedure – the customer uses mobile communication techniques in conjunction with mobile devices (Pousttchi and Schurig 2004 as cited in Singh 2011).

Mobile banking can perform various functions like mini statement, checking of account history, SMS alerts, access to card statement, balance check; mobile recharge etc. via mobile phones (Vinayagamoorthy and Sankar 2012). Banks are constantly updating their technology and want to increase their customer base by reaching to each and every customer. There are many advantages of using mobile banking, such as people in the rural or remote areas can get an easy access to mobile banking whenever required.

Mobile banking is a developing mobile technique that has combined information technology and commerce applications together. Since mobile banking was introduced, consumers have been able to use it to obtain special services 24 hours a day without having to visit the traditional bank branch for personal transactions.

2.2 Background of Mobile Banking Technology

The for the first time, in 1999, U.S. bank to use SMS banking services**,** it was not unique to bank. So that same year the U.S. the post office using SMS technologies to be aware of the position of the customer letter. Since, according to the law Klein Cohen many organizations and governmental agencies in America Use in order to reduce the cost of Internet and mobile services. WAP system was introduced to the business world in 1999, and led to the reduction in the cost of information technology to develop use and innovation new methods, and lead to reduction and control services (Farnood, 2008). In the past, the use of Internet banking by providing access to the bank at any time, have a great impact on the bank services
to Customer. Therefore, those customers were able to review the status of your bank account, carry out other transactions such as deposit accounts, and pay bills from home or office easily. Major restrictions of this model electronic banking are computer and internet access**.** Therefore, mobile banking has been introduced as a model of e-banking provides customers who need only a mobile phone. The reasons for the superiority of this approach to banking with internet banking are no restrictions in space, using the minimum facilities and another reason is the great growth of mobile phone use among users. This way has provided the development of mobile banking. (PoorniCk,2010). The evolution of mobile banking continues as the following:

- The introduction of GPRS technology in late 1999 and in 2000
- The introduction of Personal Office Mobile Services
- The introduction of mobile money (In 2000)
- The introduction of Third Generation Mobile **(**In late2001)

Mobile banking beginning in the late 1990s, has experienced five distinct stages:

The first stage, mobile banking will be summarized in simple banking operations, especially pays bills and send SMS from the bank to the customers and vice versa. The second stage is to add some of the accounts of depositors and related services to mobile banking services. In the

third stage, were used banking services via mobile network, other media such as the Internet and telephone**,** this phase was completed with this phase was completed with the emergence of intelligent mobile phones. The fourth step is to continue, development has been made as of JP Phone and Android, and this progress has led to the providing of services such as mobile Internet access and connection to the operating systems of bank**.** In the fifth stage,
this is starting; technologies have been used such as radio frequency identification chips for mobile payments, and Banking Network Connection to Visa Card and MasterCard systems. Qualitative and quantitative development of these technologies can be connected to make chips for mobile devices such as mobile phone, watches, TV and IPad even connected sunglasses**.**

Porteous (2006) classified mobile banking into two; firstly, transformational mobile banking, which is the provision of banking services using a mobile phone to reach the unbanked population. Secondly, additive mobile banking, in which the mobile phone is simply an additional channel that is used to provide banking services to those already banked.

2.3 Mobile Banking in Ethiopian Banking Industry

The electronic banking service was ushered into the Ethiopian market in 2001 when the largest state owned, Commercial Bank of Ethiopia (CBE) introduced ATM to deliver service to the local users (Gardachew 2010). After this the electronic banking service scope was further expanded to mobile banking when Dashen Bank signed an agreement with iVery, a South African E-payment technology company, for the introduction of mobile commerce in April 21, 2009. According to the agreement, iVery Payment Technologies has licensed its Gateway and MiCard E-payment processing solution to Dashen Bank. Dashen's Modbirr users can transfer 500 birr to other Modbirr users in 24 hours a day. This would make Dashen Bank the first private bank in Ethiopia to acquire E-commerce and mobile merchant transactions (Amanyehun 2011). However, mobile banking came into full practice after several years of trials and errors as well as wait-and-see attitude by customers. Since then, mobile banking has shown a gradual growth across many various parts of Ethiopia.

Despite the very high mobile penetration rate, the use and adoption of mobile banking services remains low. With the advent of new mobile technologies, such as Blackberry,

iPhone, Androids, etc., which serves as a catalyst, mobile banking is on the edge to draw millions of new users within the world teeming population (Agwu 2012).

2.4 Benefits of Mobile Banking

Mobile banking allows anytime, anywhere (within the network coverage) banking with all the inherent advantages (Pousttchi & Schurig 2007). The high penetration of mobile phones across the strata of society makes it a natural tool for taking electronic banking to its next level. It is more than likely that Internet banking and mobile banking would exist as allies rather than competitors for each other. Convenience is one of the benefits of mobile banking as banking transactions and other related activities can be performed in the comfort of customer's home or offices. The usefulness of conducting banking transactions at home or from the office eliminates the difficulties that are associated with driving to the bank, the cost of petrol, and parking. Mobile banking also allows customers to perform banking transactions 24 hours a day, 7 days a week, and 365 days a year (Eckhardt, et al 2009). General benefits include: -

- **Offering innovative**, personalized mobile services can also assist banks to attract and retain customers. (Dr Lennart, Soderberg 2008), M-banking offers financial institutions the opportunity to target and acquire new customer segments that value mobility and real-time control of their finances, leading to increased customer growth and revenue.
- **Reduced customer support costs***;* Mobile banking solutions also offer a full range of benefits for financial institutions, ranging from reduced customer support costs to improved customer satisfaction and retention as well as revenue growth. (www.mobileaware.com)
- **Offers more cost effective channel;** According to Nasikye, 2009 mobile phone offer more cost effective channel and hold greater promise for making financial services reach much lower income and remote client. It's the most cost effective service suitable for a developing country (Abunyang, 2007).

- **Mobile banking extends the convenience of existing online services;** such as account balance information, funds transfer, bill payment and mini statements by making them accessible from any mobile device. (Nyaoke William, 2008).
- **Drastically cuts down the costs of providing service to the customers;** this is the biggest advantage that m-banking offers to banks. According to the newly-appointed UK International Development Secretary Andrew Mitchell, m-banking can also provide a route out of poverty.
- **M-banking enables 'Anywhere banking'**; Customers now don't need access to a computer terminal to access their banks; they can now do so when they are traveling or when waiting for their orders to come through in a restaurant.

2.4.1 Benefits of Mobile Banking to Banks

Banks can utilize the time saved by the channel migration of customers to mobile banking for expansion of business through better marketing and sales activities. Mobile banking enables banks to reduce cost of courier, communication, paper works, etc. and also it reduces costs in setting up a branch and the resources to process transactions (Sunil and Durga, 2013). Also banks providing mobile banking services can have competitive advantage over those banks, which are not providing this service. It has also been found to increases customer loyalty that is using mobile banking customers need not to go in banks braches for fund transfer or for information, which creates a good relationship between banks and customers which helps in increasing loyalty towards the banks. Goswami and Raghavendran (2009) point out, mobile banking services will enable banks to not only increase fee-based income but also enable significant cost savings, improve service quality and provide cross-selling opportunities.

2.4.2 Benefits of Mobile Banking for Customers

Customers don't need to stand at the bank counter for various enquiries about their account. Customers can save their valuable time and travelling cost in reaching the bank for their financial transactions (Sunil and Durga 2013). Customers can pay their utility bills on time and save themselves from paying penalties, since alerts are received from the bank. Ubiquitous access, convenience and mobility are the main benefits that mobile banking

confers to customer (Laforet and Li 2005). Delport (2010) points out that with mobile banking customers no longer need to use scarce time and resources to travel to bank branches. Nevertheless, despite the widespread proliferation of mobile phones and the numerous advantages that mobile banking offers, mobile banking is still not widely adopted (Riquelme and Rios 2010).

2.5 Factors Influencing Usage of Mobile Banking

Several theories are offered in order to identify factors that cause people to accept new technologies and information systems and use them (Rao and Troshani 2007). The next section presents some of these theories and based on that conceptual frame work for this particular study is formulated.

2.5.1 Technology Acceptance Model (TAM)

TAM was first introduced by Fred Davis in 1989 to predict user acceptance of new technologies. According to (Davis 1989), TAM 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. Davis (1989) defines perceived usefulness as the degree to which a person believes that using a particular system will enhance his or her job performance.

Perceived Ease of Use refers to the degree to which the person believes that using the system will be free of effort. TAM has been extensively tested and validated and is a widely accepted model, which can be modified or extended using other theories or constructs according to author in (Masinge, 2010) and its usage has captured the attention of IS community attested by the authors in (Mathieson et al 2001). Masinge (2010) conducted a study on the factors influencing the adoption of mobile banking services at the bottom of the pyramid (BOP) in South Africa, and added perceived cost, trust and perceived risk constructs to TAM. The results of the study revealed that perceived usefulness (PU), perceived ease of use (PEOU), perceived cost, and customer's trust had a significant effect on the adoption of mobile banking at the BOP while perceived risk (PR) was found to have no significant effect. As a result of this many other models of extension have been suggested by the authors in (Luarn and Lin 2005). The perceived credibility, perceived financial cost and perceived self-efficacy has been adopted based on the literature, as an extension of Technological Acceptance Model (TAM) to

investigate and understand the behavioral intention of users of mobile bankers (Luarn and Lin 2005).

Perceived usefulness is defined as the extent to which an individual believes that he or she would benefit from using mobile banking. (Bhatti 2007; Kim, Chan and Gupta 2007) argued that an individual often evaluates the consequences of their behavior and makes a choice based on the desirability of perceived usefulness. Therefore, perceived usefulness will influence their intention to accept and adopt a system. In the context of mobile banking, one of the reasons people use mobile banking is that they find the systems useful to their transactions and saves their time as well. Benefits are also observed by banks in the form of declining the number of branches which reduces the cost per transaction. Perceived usefulness is found to be the most significant factor influencing the intention to use mobile banking. This finding suggest that if mobile banking is to be accepted by users, they should perceive it as a useful and quicker way of doing banking transactions compared with the traditional banking system. (Luarn and Lin 2005) found that perceived usefulness is a vital factor determining the mobile customer usage. (Wang et.al 2003) also agree that most customers choosing mobile services because they see their benefits. On another side, (Suoranta 2003) support that lack of awareness of its usefulness and benefits realization are important factors which hinder mobile banking acceptance.

Perceived ease of use is also 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 (Davis 1989; Venkatesh 2000; Venkatesh and Davis 1996). 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). TAM points that perceived ease of use influence the innovation acceptance. It decreases the effort paid in learning and applying new technologies. Many researches give support to TAM that perceived ease of use has positive impact on perceived usefulness and mobile services adoption (Porteous 2011, Ezeoha 2005). (Bong-Keun & Tom 2013) stated on their empirical investigation that perceived ease of use has a major significance on the adoption of mobile banking. This finding suggests that customers seek a simple, easier, faster process and

environment for banking transactions. It was also showed that perceived ease of use is a major determining factor explaining the attitude difference between adopter and non-adopters toward Mobile banking.

In the context of mobile banking, customers may find mobile banking services uneasy when the system is not easy to learn and easy to use. Information such as details of products or services, their benefits, and usage guidelines needs to be provided as it will make it easier for customers to adopt mobile banking. Furthermore, perceived ease of use helps in building trust with banks as it may send a signal that banks have really put in thought about their end users (Wang, Lin and Tang 2003). Many previous empirical studies further show that perceived ease of use has a positive influence in the adoption of mobile commerce (Khalifa and Shen 2008, Kim et al 2009; Wei et al.2009).

2.5.2 Innovation Diffusion Theory (IDT)

Rogers (2003) identifies three characteristics of innovations: 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. Some products catch on immediately, whereas others take a long time to gain acceptance.

If the innovation is perceived to be better than the existing system (a measure of its relative advantage), is consistent with the needs of the potential adopter (a measure of its compatibility), and is easy to understand and use (a measure of its complexity), it is more likely that a favorable attitude towards the innovation will be formed (Ching and Ellis 2004). Lee et al. (2005) found that the perceived relative advantage, compatibility and complexity of the innovation played a key role in the adoption of mobile banking. Therefore, this study identifies how these characteristics of innovation influence the adoption of mobile banking in Ethiopia. The remaining parts of this section identify these characteristics of innovations as established in prior studies. Chaipoopirutana, Combs, Chatchawanwan, and Vij (2009) and Lin (2011), claimed that the adoption of mobile banking is ‘complex’ as it has the negative relation with intention to adopt mobile banking. In this paper they have discussed the (Rogers 2003) innovation diffusion model’s attributes: complexity, compatibility, relative advantage and triability and found that Relative advantage, compatibility, ease of use (opposite of complexity) has a significant effect on attitude to adopt mobile banking services. They have

also suggested that compatibility has a positive relation with the adoption of mobile banking. Customers have a favorable attitude towards adopting mobile banking services, if they have positive belief about the relative advantage of mobile banking. On the other hand, (Lee et al. 2005) performed eight interviews to collect transcripts from participants and concluded that relative advantages and compatibility were positive factors affecting the adoption of mobile banking.

Relative advantage describes the degree to which an innovation is perceived as being better than its precursor (Rogers 2003). Gerrard and Cunningham (2003) identify a perceived relative advantage as being a significant factor driving the adoption of mobile banking. 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. There are a number of sub-dimensions of relative advantage such as the degree of economic profitability; decrease in discomfort; time saving; and effort (Rogers 2003). Relative advantage also refers to the comparative benefits that a user of mobile banking may avail which he/she could not get from other traditional banking services as mentioned by (Pikkarainen et. al 2004) that users are more likely to adopt mobile banking if they believe using mobile banking will gain more relative advantages as compared to other traditional banking channels such as ATM or non-mobile internet banking. It includes perceived cost and time.

a) Perceived Cost Savings refer to the transaction cost of conducting mobile banking transactions, including the airtime and bank charges. Perceived cost is defined as the extent to which a person believes that using mobile banking will cost money (Luarn & Lin 2005). The cost may include the transactional cost in the form of bank charges, mobile network charges for sending communication traffic (including SMS or data) and mobile device cost.

b) Perceived Time Saving refer to the time required to complete a transaction. Lee (2009) found in his study that time plays an important role in adopting mobile banking service by the users. It has been observed by researchers that when user perceives relative advantage or relative usefulness of a new technology over an old one, they tend to adopt it (McCloskey

2006; Rogers 2003). Therefore, mobile banking adoption is affected by the benefits available such as immediacy, convenience and affordability to customers (Lin 2011).

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 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 (Rogers 2003). 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 (Rogers 2003). Study on compatibility is a significant antecedent in determining customers' attitude towards electronic banking adoption in Malaysia (Ndubisi and Sinti 2006). Compatibility has further been found influential in the adoption of virtual store, mobile payment and mobile banking (Koenig-Lewis 2010; Lin 2011). Al-Gahtani (2003) found that compatibility had significant correlation with computer adoption and use.

Complexity is defined as the degree to which an innovation is perceived too easy to understand and use. Adoption will be less likely if the innovation is perceived as being complex or difficult to use (Rogers 2003). Complexity can be considered as the exact opposite of ease of use in the Technology Acceptance model, which has been found to directly impact the adoption of the Internet (Leaderer, et al. 1999). Customers will reject an innovation if it is very complex and not user friendly. In this context, Cooper and Zmud (1997) report ease of use of innovative products or services as one of the three important characteristics for adoption from the customer's perspective. For example, the userfriendliness of domain names, navigation tools and the graphical user interface are important determinants of the user-friendliness of a web page design. Research by Davis (1989) has found that perceived complexity is associated with the adoption of electronic technologies. Since mobile banking adoption is at the early stages of adoption in Ethiopian banking industry the complexity factor will be included in perceived to ease of use factor.

Observability Rogers (1995) argues that observability is the "degree to which the results of an innovation are visible and tangible to others". Liu and Li (2009) assert that the more it is easy to describe and observe an innovation the more positive impact it will have on people which will eventually encourage usage of the innovation. Cruz *et al.* (2010) affirm that probability of adopting an innovation increases when the benefits and usage of innovation can be easily observed.

Trainability is defined as the "degree to which an innovation can be tried on a limited basis (Rogers 1995). As per Rogers, there is faster adoption of new ideas when these can be tried before their full implementation whilst adoption tend be slower where prior trial is not possible (Puscel *et al.* 2010). Tan and Teo (2000) assert that if given the opportunity to evaluate innovation, customer minimize the particular concerns of the unknown, which led to acceptance. Therefore, repeating the evaluation and assistance in the use of mobile banking during the trial period can reduce the uncertainty about mobile banking, eventually creating positive customer attitudes to using mobile banking. Trainability can also be viewed as the degree to which an innovation may be experimented with on a limited basis (Huisman and Iivari 2006) This research used an extended TAM containing the following constructs – perceived usefulness, perceived ease-of-use, perceived trust and awareness and also three IDT constructs relative advantage, perceived risk and compatibility to explore the adoption of mobile banking. Therefore; the research integrated the TAM and IDT along with trust and awareness to investigate the main factors influencing mobile banking adoption. The additional TAM constructs perceived risk, awareness and trust as indicated in different literatures are stated as follows.

Perceived risk is the "uncertainty about the outcome of the use of the innovation" (Gerrard and Cunningham 2003). Perceived risk as defined by (Pavlou 2001), "It is the user's subjective expectation of suffering a loss in pursuit of a desired outcome". The quality of electronic services offered with the possible risk of illegal activities and fraud has always been a concern for both customer and service providers (Ba and Pavlou 2002). On a study conducted by (Masinge 2010) on the factors influencing the adoption of mobile banking services at the bottom of the pyramid (BOP) in South Africa, perceived risk, perceived cost, trust was added to constructs of TAM. In the study, the risk factor as perceived by bank

customers in electronic transactions may comprise of five facets of security/privacy risk, performance risk, time/convenience risk, financial risk and social risk.

According to (Lee 2009), performance risk refers to the loss incurred by malfunctioning of mobile banking servers. Security/privacy risk refers to a potential loss due to fraud or a hacker compromising the security of a mobile banking user. Time risk refers to the loss of time and any inconvenience incurred due to the delays of receiving payments or the difficulty of navigation.

Social risk refers to the possibility that using mobile banking may result in disapproval by one's friends, family, or work group. Financial risk refers to the potential for monetary loss due to transaction errors or bank account misuse.

According to (Dineshwar and Steven 2013), **perceived risk and reliability** were found to be the main obstacles to mobile banking usage in the African country of Mauritius. Risk in mobile banking is perceived to be higher than conventional banking because information exchange on wireless infrastructure, which produced inherent doubts among customers as hacking and other malicious attacks, might cause financial and personal data loss. Further an empirical analysis conducted by (Cheah, et al. 2011) on factors affecting Malaysian mobile banking adoption perceived risks was found to be negatively associated with mobile banking adoption.

Perceived 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. In any business or commerce deal trust is an important element. 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; Hosein 2011). Trust can be developed through spreading the right information and giving customers or users of mobile banking furnished details about the mobile commerce system to ensure the easily manageable use of mobile banking system (Pavlov 2003). A study by (Bhattacherjee 2002) provided a definition and measurement of the customer's trust of an

e-commerce service provider, based on the three dimensions or typology of trust: ability, integrity and benevolence. (Bhattacherjee 2002) defined these as follows:

- Ability refers to the perception of the customer about the competency and salient knowledgeof the mobile banking service provider to deliver the expected service;
- Integrity refers to users' perceptions that the service provider will be fair, honest and adhere to reasonable conditions of transactions;
- Benevolence refers to the extent to which a service provider will demonstrate receptivity and empathy towards the user. The service provider will make a good faith effort to resolve users' concerns and intends to do good to the users beyond profit motives.

Customers' confidence about privacy and security of a system may significantly influence adoption and usage of mobile banking. In this study, trust is defined as the extent to which an individual believes that using mobile banking is secure and has no privacy threats. Perceived Trust therefore is an important construct which affects customer behavior and determines the success of mobile banking adoption (Wei *et al*. 2009). (Sadi and Noordin 2011), in an exploratory analysis of the factors influencing adoption of M-commerce in Malaysia reveals that rust identified as a key factor influencing the adoption of M-commerce. A similar study carried out by (Mashagba et al 2013) revealed that trust, risk and security had an effect on mobile banking adoption Security and privacy are found to be the major obstacle in adoption of electronic based banking activities. Customers tend to use those facilities which they believe to be the secured one and which are from some credible source. People generally first think about the trustworthiness of communication network and then about the service provider (Yeh & Li 2009). Many researchers have found privacy and security that concerns which encompasses the trust factor, is found to be the most important and significant factor impeding the adoption of mobile banking activities (Horton et al. 2002; Gunsaekaran&Ngai 2003; Nasri 2011). he trusting intention represents users' willingness to engage in subsequent transactions with the service provider (Bhattacherjee 2002). The higher levels of trust in a service provider will therefore lead to a greater intention on the part of user to engage in mobile banking transactions (Gu, Lee & Suh 2009; Lee et al. 2007).

Awareness The level of information customers have on mobile banking is one of the major factors impacting the adoption and usage of online banking according to the author in (Sathye 1999). The research

further states that the adoption rate of an innovation could be determined by level of awareness of the customers. The use of mobile banking services is new to many customers and the banks need to create enough awareness to capture the attention of the customers.

Adoption is the acceptance and continued use of a product, service or idea. According to (Sathye 1999), customers go through "a process of knowledge, persuasion, decision and confirmation" before they are ready to adopt a product or service. The adoption or rejection of an innovation begins when "the customers become aware of the product". Hence for adoption of mobile banking, it is necessary that the banks offering this service make the customers aware about the availability of such a product and explain how it adds value relative to other products of its own or that of the competitors. Customers must become aware of the new brand or technology. An important characteristic for any adoption of innovation service or product is creating awareness among the customers about the service or product (Sathye 1999). Awareness creation speeds the sales of products and evidences from different participants, lay credence to this. The level of awareness (Palvia 2009) is an important factor in encouragement of consumers to adopt related self service facilities. The amount of information customers has about online banking has been identified the major factor impacting the adoption. According to (Sathye 1999) while the use of online banking service is fairly new experience to many people, low awareness of online banking is major factor in causing people not to adopt online banking. In an empirical study of Australian customers found that customers were unaware about the possibilities, advantages or disadvantages involved in online banking.

2.6 Services Available On Mobile Banking

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

2.6.1 Mobile Accounting

Tiwari & Stephan (2007) defined mobile accounting as transaction-based banking services that revolve around a standard bank account and are conducted and/or availed by mobile devices. Not all mobile accounting services are however necessarily transaction based. Mobile accounting services may be divided into two categories to differentiate between services that are essential to operate an account and services that are essential to administer an account (Renju 2014). Moreover, additional services are required that inform a customer about his/her transactions and other activities involving their account. It is for this reason that Mobile Accounting is offered almost regularly in combination with services from the field of Mobile Financial Information.

2.6.1.1 Account Operation

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

- **Money remittances**: - Mobile devices may be used to instruct the bank to remit money in order to conduct one-time transactions, such as paying bills or transferring funds. This service can also include the facility to cancel an ordered remittance.
- **Issue standing orders**: - The house bank may be entrusted with standing orders for payment of regularly recurring payments such as payment of standing payments, monthly rent or telephone bill.
- **Transfer funds to and from sub-accounts**: - Funds from one sub-account may be transferred to another as and when needed, for instance from a savings account to checking or other types of account and vice versa (Sunil and Durga 2013).
- **Subscribing insurance policies**: - Standardized, low-cost insurance policies like travel insurance policy may be purchased via mobile devices. This service could be particularly attractive in time-critical situations, for instance, if a bank customer has to set out on an urgent, unplanned journey, he may still be able to subscribe to a travel insurance policy offered by his house bank.

2.6.1.2 Account Administration

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

- **Access administration**: - Mobile devices may be used to administer the access to an account, for example to change the individual PIN or to request new transaction numbers.
- **Change operative accounts**: - Through this service a customer can change his default operative account and do transactions using a different account. This option is attractive for customers holding several sub accounts. Funds of sub-accounts may be hereby utilized in a targeted manner without first transferring the amount to the default account.
- **Blocking lost cards**: - Mobile non-voice telecommunication systems such as Wireless Application Protocol, Short Message Service (WAP, SMS) can be used round the clock to speedily block lost credit and debit cards irrespective of the current geographic location.
- **Cheque book request**: - Instead of going personally to the bank, the customer can request for a cheque book to be mailed to his or her address as per the records of the bank. This saves his/ her valuable time (Sunil and Durga 2013).
- **Bill Payment: -** for those companies which register with the bank for this service, the payment is made on request on mobile phone banking.
- **Change of Primary Account**: - the customer has the option to change the primary account to another new account number for carrying out transactions (Sunil and Durga 2013).

2.6.2 Mobile Financial Information

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

2.6.2.1 Account Information

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

- **Balance inquiries**: - mobile devices may be employed to check the current financial status of own bank or securities accounts (Sunil and Durga 2013).
- **List of latest transactions**: - mobile devices may be used to request a list of the latest transactions performed on an account. This service works with a standard, pre-specified number of latest transactions that are reported, as and when demanded. Most of the banks provide a list of transactions.
- **Statement request**: - unlike the request for a list of latest transactions, it generates a list of all transactions in a given period, for instance in a week or in a month. Statements may be requested either manually, as and when needed electronically. With Mobile Banking the account statements can be requested via and/or delivered on mobile devices (Cruz et al. 2010).
- **Transaction and balances**: - the bank may be instructed to automatically alert the customer via SMS whenever transactions (credits as well as debits) exceeding a certain amount are performed on the account. In addition, a similar threshold alert may be activated for the balance status of the account. The customer may be informed via SMS whenever the balance falls below a certain predefined level. This service may be useful to help the customer avoid unpleasant situations by not being able to honor his commitments (Cruz et al. 2010).
- **Threshold alerts for stock prices**: - the bank may be instructed to send an alert on mobile devices, via SMS, when prices of some particular stocks fall or jump to a predefined threshold value and ask for further instructions (Suoranta and Matila 2004).
- **Returned cheques or cheque status**: - the customer may be informed without time delay if one of her or his deposited cheques has not been honored and corrective steps are required.
- **Credit card information**: - the customer may check anytime and anywhere the current status of his credit cards and the amount that he may utilize at that given point of time.

- **Branch and ATM locations**: - mobile devices may help finding the nearest branch or ATM affiliated with a bank. The current location of the customer may be determined by positioning the mobile device. This service may be particularly useful while travelling (Crosman, 2011).
- **Helpline and emergency contact**: - mobile devices may be provided with content that is required in emergency situations, for instance to block a lost credit card and cheque book. The information may be either embedded in the telephone menu, for example in cooperation with a network carrier or the information may be provided on a WAP page analogue to a web page.
- **Information on the completion statutes of an order: -** the bank may use "push" services to inform the customer via his mobile device regarding whether or not his orders could be carried out. This ensures that urgent information can be provided to the customer while on the move.
- **Product information and offers: -** the bank can provide information about its products and new offers to a customer on the move. A customer can "pull" the information that he wishes to access. On the other hand, the bank can "push" the information or offers that the customer has identified as interesting and is willing to receive.

2.6.2.2 Market Information

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

2.7 Technologies Employed to Provide Mobile Banking Services

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

2.7.1 SMS (Short Message Service)

On the messaging-based applications, the communication between the bank and the customer is carried out via text messages. For example, by using a registered mobile number, the customer sends a predefined command to the bank, and then uses text messages to conduct transactions with the bank. An example of messaging-based applications is the Unstructured Supplementary Service Data (USSD), which has compatibility with most mobile phones. Existing mobile banking applications based on USSD includes WIZZIT in South Africa (WIZZIT 2005), MPESA in Tanzania (Camner & Sjoblom 2009), M-PESA in South Africa (Nedbank 2010b) and FNB mobile banking (FNB 2010). The term “SMS Banking” refers to the provision of banking and financial services via means of text messaging service, known as SMS. SMS allows the financial institutions to communicate with their customers. Almost all mobile phones have the ability to use SMS; SMS is so suitable for sending messages from banks for a number of banking operations. In order to create a query, the customer sends an SMS containing the service request to a special number which is considered for this purpose. The customer sends a customized SMS (a command based instructed with Arabic number) to the bank with the predefined commands for each offered service. The server of the bank receives the SMS, interprets the commands and executes commands and instructions, if the request is found to be authorized. The authentication is carried out with the help of a special Mobile Banking, Personal Identification Number (MPIN). Furthermore, the requests are only accepted from a mobile phone number that has been registered as the authorized number of operating that particular bank account. With the integration made with the mobile banking server one can get all the financial and non-financial information. After completion of the whole process, the information will be gathered in the oracle database for future reference. For example: - Dialing to 889, Inserting the command and the PIN, Navigation of the financial or non-financial information, Logging off.

2.7.2 Browser-Based

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

2.7.3 Client-Based (Downloadable Applications)

This method requires the customers to use software installation, and this will serve as a user interface that can allow customers to use the mobile device while offline to access some basic transactions before going online. Typing details before connecting to the internet could reduce cost. This client based application is particularly useful because it allows customers to stay offline and while preparing transaction such as entry of account details and afterwards the transmission is made by sending out the data, this banking process conducted offline reduces online connection time and cost (Pendharkar 2004). These are mobile banking applications that the users should download on their phone. Using the properties of these applications, transactions can be encrypted completely in both source and destination. Since this software has been designed for special purposes, mobile banking application designers can optimize the applied interface for the financial transactions. The independence of application is one of the advantages of these applications for financial institutions (Ming 2007). Once customers have downloaded the software on their phone, they can use the Mobile Banking application. In other words, the application should be compatible with the various needs and functions for a large number of mobile phones and this is expensive. The phone should also support one of the environments such as the Microsoft Windows Mobile. Another problem of mobile banking application is that the customers should download the software, install it on their devices, and update its new versions, and maybe this is a new problem for some of the customers.

Empirical Review

Several studies have been conducted on mobile banking and the performance of commercial banks overall the world. From those studies, the researcher tried to review some from Ethiopia, Africa and the rest of the world.

Kalkidan Gezahegn (2016), studied on factors influencing usage of mobile banking in Addis Ababa, Ethiopia. Her study tried to build on two widely used models for technology adoption, the Technology Acceptance Model (TAM) and Innovation Diffusion Theory and to identify factors influencing customer's usage of mobile banking. The research results found relative advantage, compatibility, perceived trust, perceived usefulness, and perceived risk as major influencing factors for mobile banking adoption whereas perceived ease of use and awareness were found to have insignificant effect on mobile banking usage for bank customers located in Addis Ababa, Ethiopia. The study recommended banks to consider investing in campaigns and arranging information sessions to demonstrate the features of mobile banking services, and its benefits over traditional channels.

Pako Maradung (2013), also studied on Factors affecting the adoption of mobile money services in the banking and financial industries of Botswana. His study set out to investigate factors affecting the adoption of mobile money services in the banking and financial industries of Botswana in the light of the Technology Acceptance Model (TAM) and demographic variables (that is, age of individuals, income, education level, bank account) from mobile money service adoption literature. The analysis of the results revealed that gross income and ownership of bank accounts appeared to be insignificant in determining the use of mobile money services in Botswana. However, the age of individuals did seem to be significant in determining whether an individual used mobile money services or not, with more young people preferring to use mobile money services than older people.

Farhana Yasmin (2014), researched on Factors Influencing the Adoption of Mobile Banking: Perspective Bangladesh. The paper focused on trust, perceived cost and perceived risk including the facets of perceived risks: performance risk, security/privacy risk, time risk, social risk and financial risk. The research model includes the original variables of extended technology acceptance model (TAM). The research has found that customers will consider adopting mobile banking as long as it is perceived to be useful and easy to use. But the most critical factor for the customer is cost; the service should be affordable. Trust was found to be

significantly negatively correlated to perceived risk. Thus, trust plays a role in risk mitigation and in enhancing customer loyalty.

A research conducted by James Mwendwa, Dr. Odiek and Dr Douglas (2014), on The Effects of Mobile Money Services on the Performance of the Banking Institutions: A Case of Kakamega Town, focused on to examine how various mobile money services transactions' impact on the performance of banking institutions in Kakamega town. From the findings of the study; it can be inferred that the introduction of mobile money services has contributed positively to the financial performance of the banking institutions. Convenience and reliability of various mobile money services has largely led to increased customer satisfaction and loyalty despite occasional technical itches that prove disappointing to the customers. Basing on the study findings, the following recommendations are forwarded; The bank should conduct research on other possible mobile money services packages that are user friendly and develop them so as to enable deposit/withdraw of money using mobile phone which will meet different customer requirements and capture market niches that competitors have not identified hence expand on the market share leading to improved financial performance. Free training and refreshing training should be provided to staff of the financial institution and if possible, to customers to equip them with skills in the ever-changing technology.

A research conducted by Rachael W. Mutua, in kenya on effects of mobile banking on the financial performance of commercial banks in kenya focused on determining the effect of mobile banking on the financial performance of commercial banks in Kenya. The researcher used descriptive research design. The study found that there exists a weak positive relationship between mobile banking and the financial performance of commercial banks in Kenya. The study recommends that the policy makers take mobile banking awareness creation into consideration when drafting policies on the operations of banks in Kenya. This was because of the indirect relationship of mobile banking and financial performance especially as the industry moves into a technologically competitive environment. The study also recommends that policy makers keep a keen eye on the developments of mobile banking as it is a new platform for competition among commercial banks as the world moves into a digital age to ensure it does not lose its regulatory role.

Research Gap

There have been a number of valuable studies in the area of mobile banking over the year's back in North America, Europe, Asia and some from African countries such as Kenya, Ghana, Nigeria and Zimbabwe presented evidence for a number of variables that influenced customer behavior intention to use mobile banking and its challenges and perspectives, however the study of mobile banking has been given little attention in literatures in Ethiopia. As per the researcher knowledge there is no study conducted with regards to assessment of challenges and prospects of mobile banking in commercial bank of Ethiopia, Wolkite town. So, to specify the gap of the research,

- ✓ The previous researches were conducted mainly outside Ethiopia like Africa and Asia and the studies conducted in Ethiopia mainly focus on urban areas like Addis Ababa.
- ✓ The scope of previous studies is vast and intended to cover large scale of geographical

CHAPTER THREE

3. Research Methodology

3.1 Research Design

A research design was the conceptual structure with in which research is conducted; it constitutes the blue print for the collection, measurements and analysis of data as such the design includes on outline of what the researcher will do from writing the hypothesis its operational implications to the final analysis of data (Kothari, 2004).

The general objectives of this studied was to assess the challenges and prospects of mobile banking in commercial bank of Ethiopia Wolkite branch. So, this study adopted Mixed research approach which is both qualitative and quantitative. Qualitative research designs are usually meant for researches that require depth instead of breath and are concerned with subjective assessment of attitudes, opinions and behavior. while quantitative research design involves the generation of data in quantitative form which can be subjected to rigorous quantitative analysis in a formal and rigid fashion (Kothari, 2004). Therefore, mixed research approach which contains both qualitative and quantitative research approaches was the right to use. In order to answer the statements of the problem and meet the research objectives, the design of the study was descriptive type. Descriptive research studies are those studies which are concerned with describing the characteristics of a particular individual, or if a group (Kothari, 2004).

3.2 Sample Design

A sample design was a definite plan for obtaining a sample from a given population. It refers to the technique or the procedure the researcher would adopt in selecting items for the sample. Sample design may as well lay down the number of items to be included in the sample i.e. the size of the sample. Sample design is determined before data are collected (Kothari, 2004).

In order to undertake the study, the researcher used non-probability sampling design; purposive sampling for the employees and for the customer of mobile banking one common form of convenience sampling would be employed. Sometimes called voluntary response sampling.

3.2.1 Study Population

A population is a group of individuals, persons, objects or items from which samples are taken for measurement (Kothari, 2004). In order to meet the research objectives, a given amount of sample size need to be taken from the total population of employees of CBE and customers as well. There are currently 26 employees and unknown customers of mobile banking are there. Out of this the target population of the study is unknown.

3.2.2 Sample Size

Sample size refers to the number of items to been selected from total population to constitute a sample (Kothari, 2004).

Accordingly, the targeted population is unknown, even if the researcher obviously knows the total employees of the banks but the customers are not. To do so 15 employees are selected purposively and 27 mobile banking customers were conveniently selected. Such samples rely entirely on individuals who volunteer to be a part of the sample, often by responding different techniques. It is extremely unlikely that individuals participating in such voluntary response surveys re representative of any larger population of interest. Duo to such circumstance the researcher selects 27 voluntary customers and totally the researcher conducted on the sample size of 42 respondents.

3.2.3 Sample Selection Techniques

As stated in the sample design, the researcher would be used non-probability. The reason was, among the total employees the researcher selected those employees who have knowledge and skill toward mobile banking usage and service. This was done by deliberately selecting those who are related to the matter. In short non-probability sampling was that sampling procedure which does not afford only basis for estimating the probability that each item in the population has of being included in the sample. It is also known by different names such as deliberate sampling, purposive sampling and judgmental sampling. On the other hand, the researcher used convenience sampling technique to select customers of mobile banking in commercial bank of Ethiopia.

3.3 Source of Data

The study was conducted by collecting data from primary sources. Primary data are those which are collected fresh and for the first time, and thus happen to be original in character. (Kothari, 2004).

Primary data was collected from the staffs of the commercial banks the customer who use mobile banking based on some structured and unstructured designed questionnaires, which included both closed-ended and open-ended questions which provided the respondents an adequate expression of their views on the questions.

3.3.2 Data Collection Methods

In order to collect sufficient data so as to answer the research questions the researcher used data collection instrument like; questionnaire to get quantified results.

Questionnaires consists of a number of questions printed or typed in a definite order on a form or set of forms (Kothari, 2004). In this study structurally designed questionnaire was used. This included both close-ended and open-ended questions which will help the respondents express their views deeply.

3.4 Data Analysis Method

The data, after collection, has to be processed and analyzed in accordance with the outline laid down for the purpose at the time of developing the research plan. Technically speaking, processing implies editing, coding, classification and tabulation of collected data so that they are amendable to analysis (Kothari, 2004). The relevant information was obtained in a standard form using tables, frequencies and percentages to analyze and interpret the information. The results would be in and tabular figures. Those ensure easy understanding of the readers.

CHAPTER FOUR

4. DATA ANALYSIS AND INTERPRETATION

This chapter covers the presentation, analysis and interpretation of data collected from primary sources. A total of 42 questionnaires were distributed (15 to employees of commercial bank of Ethiopia and 27 to customers of commercial bank of Ethiopia) in order to collect data about the challenges and prospects of mobile banking. Out of the questionnaires distributed totally 42 usable responses were obtained because as the researcher discuses on chapter three purposive and convenience sampling technique would be employed.

4.1. Back ground information of respondents

Table 1.1 Demographic characteristics of respondents

Back ground information	Items	No of respondents	**%**
Sex	Male	33	78.5
	Female	9	21.2
Age	20-25	11	26
	26-30	22	52
	31-35	4	9.5
	36-40	3	7.4
	Above 40	2	4.4
Level of Education	Elementary	0	0
	High school	3	7.
	Preparatory	6	13.8
Year of Experience	Diploma	9	21.2
	Degree	17	42

	Masters	7	16

Source: Primary data 2020

The above table shows that the majority of the respondents are male 78.5% and 21.5% are female. The majority of respondents are from age 26-30 consisting of 52% and 26% from 20-25. This shows that most of the workers are on the productive age. 52%. And the respondents have degree from total of 42%, master's degree 16%. And the remaining are elementary, high school, preparatory and college. This shows that all respondents are enough knowledge and this helps the bank to perform its services effectively and also enabled the researcher to obtain a sufficient and necessary data to conduct the paper.

4.2 Questions regarding M-banking challenges and opportunities

4.2.1 Challenges that affect the adoption of M-banking technology

Table 1.2 challenges that affect the adoption of M-banking technology

	Degree of response										
	SDA		DA		NU		AG		SA		Total
	FRQ	%	FRQ	%	FRQ	%	FRQ	%	FRQ	%	42/100 %
Lack of customer awareness with M-banking products;	13	30.95	16	38.09	7	16.67	4	9.52	2	4.76	100
Lack of technical and managerial skills in implementatio	11	26.19	18	42.86	3	7.14	7	16.67	3	7.14	99.93

n and development of M-banking technology;											
High cost of implementation of M-banking (such as cost of ICT equipment and network, software and re-organization;	5	11.90	15	35.71	5	11.90	10	23.80	7	16.67	100
Resistance to changes in technology among by Board, top Management and stuff;	12	28.57	23	54.76			4	9.52	3	7.14	99.99

The above table 1.2 shows 3 factors that affect the adoption of M-banking. This are organizational, environmental and technological factors. In organizational factor there are items listed as sub factors. From this sub-factors 4(9.52%) of the respondents agree that there is lack of awareness in customers with M-banking products while the rest 7(16.66%) are neutral. The majority of the respondents are neutral 3(7.14%) with regard to lack of technical and managerial skill skills in implementation and development of M-banking technology while 7(16.66%) agree and 18(42.86%) disagree.5(11.90%) of the respondents are neutral regarding the high cost of M-banking in implementation and 10(23.80%) agree that M-

banking has a high cost in implementation. Half of the respondents 4(9.52%) agree that there is resistance in board, top management and stuff while 23(54.76%) disagree.

4.2.2 Benefits from adoption M-banking by the bank

Table 1.3 Benefits from adoption M-banking by the bank

	Degree of response										
	SDA		DA		NU		AG		SA		Total
	FRQ	%	FRQ	%	FRQ	%	FRQ	%	FRQ	%	42/100 %
Facilitates development of new products and new business in the banking industry;	2	4.76	5	11.90	3	7.14	25	59.52	7	16.6 6	99.98
M-banking is convenient, i.e No time limit to access bank account and information	3	7.14	7	16.66	4	9.52	20	47.61	8	19.04	99.97
Enhance accessibility of the bank's services (in	4	9.52	1	2.38	0	0	25	59.52	12	28.57	99.99

terms of place);											
Facilitates marketing and market access;	1	2.38	3	7.14	2	4.76	26	61.90	10	23.80	99.98

According to the above table service benefit that M-banking has, 7(16.66%) strongly agree in M-banking facilitating development of new products and new business in the banking industry. 8(19.04%) of the respondents strongly agree that M-banking is convenient because of' service and accessibility. 25(59.52%) said M-banking enhances accessibility of the bank service, 20(47.61%) said its improves transaction speed agree that M-banking has the capacity to creates better relationship among banks and clients. And 26(61.90%) agree that M-banking facilitates marketing and market access.

4.2.3 Driving factors for the adoption of M-banking services in CBE

Table 1.4 Driving factors for the adoption of M-banking services in CBE

based on the four questions shown in the table 1.5 above to confirm the existence of the opportunities for adoption and

	Degree of response										
	SDA		DA		NU		AG		SA		Total
	FRQ	%	FRQ	%	FRQ	%	FRQ	%	FRQ	%	42/100%
Desire to improve organizational performance and productivity;	2	4.76	1	2.38	3	7.14	31	73.80	5	11.90	99.98

Desire to improve the relationship with customers;	0		2	4.76	0		23	54.76	17	40.47	99.99
Existence of high competition in the banking industry;	0		0		2	4.76	26	61.90	14	33.33	99.99
Desire to satisfy rapid change Legal frame works that enforce banking industries to adopt technological innovation;	4	9.52	2	4.76	5	11.90	24	57.14	7	16.66	99.98

development of M-banking technology, Accordingly, the sampled respondents agreed with the idea that the existence of high customer's demand, improvement in the banking habit of the society, late adopter of M-banking in Ethiopia banking industry, commitment of the government to facilitate the expansion of ICT infrastructure and to strengthen the banking industry are existing opportunities fostering the adoption and development of M-banking technology in Ethiopia banking industry. Item 1 shows 31(73.80%) agree that in the country their exists an opportunity to improve organizational performance and productivity, 17(40.47%) strongly agree to the desire to improve the relationship with customers is an opportunity. agreed that there is existence of high competition in the banking industry that

could be used as an opportunity to the adoption M-banking, Desire to satisfy rapid change of customer needs and preferences was responded as 7(16.66%) strongly agree and the legal frame works that enforce banking industries to adopt technological innovation was responded as 24(57.14%) agree. In general, all the listed elements for the existing opportunities have been responded positively and were seen as opportunities for the adoption of M-banking.

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATIONS

This chapter will present conclusion of findings in section afterwards, the possible important recommendation and suggestion for further research methods will be presented.

5.1 Conclusion

The findings of the study revealed that adoption and development of M-banking technology in CBE Wolkite branch stretches wide across the two extremes of the challenges and prospects where the concerted effort by stakeholders to overcome the challenges will bring about immense opportunities to the dominant players in the field with the ultimate result. Accordingly, a number of conclusions can be drawn from these results. Potential operational efficiency benefits of M-banking adoption and development as perceived by the CBE Wolkite branch are: increase productivity, reduces paper work, reduce transaction cost, generate foreign currency, increase reliability and reducing errors. Moreover, the bank realized service benefits like, facilitates development of new products, facilitates marketing and market access, improve customer service, reduce long queues in banking halls, increase accessibility of the bank services, create good relation among banks and clients and encourages price transparency. Perceiving both operational and services benefits have positive tendency to adopt and develop M-banking technology among the bank.

Despite the above benefits of adopting and developing M-banking technology in CBE Wolkite branch, it is associated with some challenges. The study shows that high cost of ICT equipment's and network, software and re-organization, lack of customer awareness and resistance to changes in technology are the major challenges of CBE Wolkite branch facing for adoption and development M-banking technology. The prevailing technical and managerial skills available in the CBE Wolkite branch towards adopting and extending of M-banking technology are found to be limited to influence the technological development rate. Limitation in network infrastructure and internet related support services, low levels of computer literacy, low level of ICT infrastructure and lack of sufficient government support are considered the basic external challenges facing CBE Wolkite branch to adopt and develop M-banking technology. Besides, Security risks and lack of trust on the technological

innovations are other challenges faced by the CBE Wolkite branch in adoption and development of M-banking.

Therefore, from the above fiding is possible to conclude that M-banking technology is not well adopted and developed in CBE Wolkite branch considering adoption and development of M-banking technology with the rest of the world.

5.2. Recommendations

Based on the findings the researcher came up with the following possible recommendations to policy makers, the banks, and the government in order to overcome the challenges, exploit the untapped opportunities in adoption of M-banking technology and to ensure a successful practice of M-banking technology in CBE Wolkite branch.

- The Bank should create deep awareness to community concerning the M-banking products they offer and the benefits associated with using M-banking services through advertising their products and services on the internet, mass media as well as through organizing public exhibition, universities and talk shows. Besides, the bank should attract the community to use the technology by diverse incentive campaigns. This way, customers' interest would be aroused;
- Banks should work to improve customers' confidence by providing adequate security of transaction back up of critical data files and alternative means of processing information.
- In collaboration with banks, Government should educate and inform the community on the workability and effectiveness of M-banking technology. This will increase the customer confidence levels;
- The banks should facilitate proper and continuous training courses for their employees to have adequate understanding of the M-banking technology so as to achieve the desired objectives;
- High cost of ICT equipment and network, software and re-organization has been a challenge the bank facing for the adoption and development of M-banking. The researcher therefore, recommend that the bank acquire the ICT equipment's to use; Government should support banking sector by facilitating development of sufficient ICT infrastructure for the successful implementation and development of M-banking services;

- Banks should emphasize on the benefits that customers will obtain in the aspects of cost savings, convenience, flexibility, and mobility when using mobile banking services. Eventually, banks might try to educate users the benefits of using mobile banking services through promotional mix such as personal selling, advertisements, sales promotions, and public relations.

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