

MOBILE BANKING IN ETHIOPIA: PRACTICES, CHALLENGES AND OPPORTUNITIES

A Research Proposal Submitted to the School of Graduate Studies of St. Mary's University to Undertake a Research in Partial Fulfillment of the Requirements for the Award of the Degree of Business Administration (MBA)

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DECLARATION

I, Fantahun Teshome, hereby declared that this study entitled as “**MOBILE BANKING IN ETHIOPIA: PRACTICES, CHALLENGES AND OPPORTUNITIES**”, is my own work. I have carried out the research work independently with the guidance and support of my research advisor. This study had not been submitted to any degree/diploma in this or any other institution. It is done in partial fulfillment of the requirements for the Award of the Master Degree of Business Administration (MBA).

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CERTIFICATION

This is to certify that Fantahun Teshome has carried out his research work on the topic entitled “MOBILE BANKING IN ETHIOPIA: PRACTICES, CHALLENGES AND OPPORTUNITIES”. This work is original in nature and is suitable for submission to the award of MBA in Finance and Accounting.

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ABSTRACT

As the growth of mobile banking technology in the world, Ethiopian banks are putting their maximum exertion to be part of this global technological advancement of mobile banking services. However their efforts are full of challenges and opportunities. This research is mainly investigating the current practice, challenges and opportunities of mobile banking services in Addis Ababa by focusing on selected commercial Banks. Four sample banks were selected to strengthen the findings of the study and because they started using mobile banking services sometimes ago. Information was gathered from the IT Managers of the selected four Banks through interviews and also from the customers of each bank by open and closed-ended questionnaires. Descriptive research approach has been applied to analyze the data that are collected from the respondents. Tables are also prepared to summarize the responses. Directives and periodical bulletins of the National Bank of Ethiopia have also been considered while making conclusions and recommendations.

From the analysis of the collected data, the findings revealed that: balance inquires, cash withdrawals, and fund transfers within same bank, are some of the widely applicable services of mobile banking by most of the customers. Lack of skilled man power, chances of risk, Lack of suitable legal and regulatory framework, absence of financial networks that links different banks, low level of internet penetration and poorly developed telecommunication infrastructure, high cost of internet, security concerns are found out to be among the major challenges for the improvement of mobile banking service. People in the city of Addis Ababa are showing improving interest to use more out of the mobile banking service.

ACRONYMS

| | |
|-----------|---|
| ATM | Automated teller machine |
| BLMT | Broadband local money transfer |
| CBE | Commercial Bank of Ethiopia |
| DB | Dashen Bank |
| E-Banking | Electronic banking |
| ICT | Information communication technology |
| M-Banking | Mobile Banking |
| MCB | Multi-channel banking |
| NBE | National Bank of Ethiopia |
| NGN | Next generation network |
| NAT | Network address translation |
| NGO | Non-governmental organization |
| SSL | Secure Socket Layer |
| SMS | Short message sending |
| SWIFT | Society for Worldwide Inter-bank Financial Telecommunication |
| PC | Personal computer |
| POS | Point of sale |
| USSD | Unstructured Supplementary Service Data |
| ZB | Zemen bank |

CHAPTER ONE

INTRODUCTION

Background of the Study

The rapidly growing information and communication technology is knocking the front-door of every organization in the world, where Ethiopian banks would never be exceptional (Nyamtiga, B. W., Sam, A., & Laizer, L. S. (2013). They also added that electronic Banking has been widely used in developed countries and is rapidly expanding in developing countries. In Ethiopia, electronic payment systems are growing towards some banks. In order to survive and to be competent in the current global banking industry, Ethiopian banks should consider the widely application of electronic banking activities.

According to Petrova K. (2002) Mobile 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 like alerts on account limit or balance. It eliminates the time as well as space shortcomings from banking operations like, balance inquire and fund transfer from one account to another account without visiting bank branches (Mishra and Sahoo, 2013).

The Ethiopian commercial banking system is composed of two state owned commercial banks and 16 private banks. Though it is true that traditional banking has grown steadily over the years, in terms of technological based financial service/ product the Ethiopian banking sector didn't fully benefit from ICT in general and M-banking in particular in accordance with the quarterly NBE Bulletin of Birritu Number 119. Currently there are six commercial banks that commenced M-banking service, albeit the M-banking

regulation directive was issued in January 2013. In spite of these, mobile banking is a very recent phenomenon in Ethiopia and only six of the eighteen commercial banks have started mobile banking. Hence, the study attempted to assess the practice and to explore the major challenges that facing Mobile banking activities and identify the existing opportunities that should be considered for the widely operation of Mobile banking service to majority of the people.

Based on the research article entitled “Mobile Banking in Ethiopia: Challenges and Prospects” that is published on the quarterly NBE Bulletin of Birritu Number 119, of February 2015, the mobile banking development in Ethiopia is at its starting stage. Currently mobile banking practice in Ethiopia can be considered as accessing the core banking system within the bank. Hence, only a customer of a given bank can access some banking services via his/her mobile phone. Moreover; there are only six commercial banks that have got license to operate mobile banking services as per the NBE Directives No. FIS /01/2012. As of December 2014 there are about 151,425 active number of mobile subscriber customers in these six banks.

The research stated that mobile banking services in Ethiopia has been started in 2013 by mobile banking development in Ethiopia is not full-fledged in terms of exhaustively utilizing all the mobile services one can get. Currently, of all the types of mobile banking services, most customers of the bank use notification or alarm inquiry. Sources from NBE confirmed that mobile banking service is started in late 2013 by Zemen Bank S.C and followed by Commercial Bank of Ethiopia in 2014. Therefore, this study attempts to see the practices of mobile banking services, and identify the challenges and opportunities of the adoption of mobile banking in Ethiopia.

Statement of the Problem

Before the implementation of the first growth and transformation plan (GTP I) by the Federal Government, Ethiopian banks were categorized as the least developed financial institutions by World Bank (Mobile Phone and Mobile Banking in Ethiopia, November 2007). However, in recent years Ethiopian banks are improving their service delivery by applying current technological operating systems towards their day-to-day services as per the source from the World Bank report of 2015. Of all the implementation of these advancements, mobile banking service has been emerged as widely applicable by the government owned Commercial Bank of Ethiopia and other privately owned banks as well. As the regulatory body of banking activities in the country, the National Bank of Ethiopia (NBE) has developed relevant proclamation that banks should follow in performing electronic banking undertakings. The efforts of offering electronic financial service are found quiet encouraging, by the National Bank of Ethiopia. On December 2014, the Bank Supervision Director of NBE stated that it is not only possible, but necessary to take advantage of new developments and innovation in technology, infrastructure and distribution networks to deliver financial services cost-effectively and easily accessible to the public.

In response to Ethio- Telecom's announcement of the availability of third and fourth generation internet services in Addis Ababa, mobile phone technology has emerged as the most potential and well suited channel for financial inclusion by Banks and individuals of the city. Use of mobile phone for inclusive finance is gradually becoming acceptable by some people of the city.

In addition the official website of Ethio-telecom on July 2015, announced that the mobile phone coverage among the middle and high income population is more than 60 percent in Addis Ababa. Such a very high coverage of mobile phones is taken into consideration by Banks to use mobile phones as a platform for commercial services.

Even though mobile banking service in the city is at its infant stage, it is still one of the arguable and interesting topics to study the benefits and challenges of it. Besides the number of studies on this topic are very few except the recent research by Henok Arega, Acting Senior Research Officer in Monetary and Financial Analysis Directorate (NBE) of February 2015 and by Beza Muche of Mekelle University in June 2010. This paper is intended to fill this gap and to be used as a reference for further studies. Moreover, mobile banking service could not be provided solely by banks, it depends on the availability of telecom networks.

One of the major phenomena in the turn of the millennia is the expansion of mobile phones coverage especially into the developing world (Mallat, N 2006) The rate at which mobile phones coverage has expanded into the developing world has surpassed expectations (Aker and Mbiti, 2010). The expansion of mobile phones is not just an expansion of technology. It can be used as a basis to use them more than simple communication devices. Mobile phones can be used as a platform for providing various services, amongst is mobile banking (Aker and Mbiti, 2010). In many parts of the developing world, particularly in Africa and Asia, mobile banking is being used as an important tool to bring financial services to the people (Ian Mansfield, 2011)

The success of mobile banking in many developing countries is a witness to the fact that mobile banking can be a solution to the challenges for the financial inclusion of the majority through reduction of transaction costs and ensuring secured banking. In this regard, M-Pesa in Kenya and EKO in India are notable examples. However, the challenges and the factors that need to be considered in adopting mobile banking in developing country heavily depends on the socio-economic and political contexts and the way the financial and the communication sectors are set up.

The context under which financial and telecom services are being delivered in Ethiopia can be characterized by government dominance and intervention, monopolized telecom

delivery by the government and inexistence of foreign banks. This is different from the contexts in the other developing countries where mobile banking is successfully launched, for instance Kenya, India and South Africa. In effect, the challenges of adopting mobile banking in the country and the process of rolling it out would be different from the aforementioned countries where most of the research in mobile banking has been carried so far.

Even though the penetration of mobile phones among the population continues to grow in significant numbers year on year out, of eighteen fully operating Commercial Banks in Ethiopia, there are, currently, six banking institutions that commence mobile banking as per the NBE Directive No. FIS /01/2012. Moreover, the overall use of mobile phone banking technology to the rural community is not yet started in the country. Furthermore, studies related to challenges and prospects of m-banking in Ethiopia have not been done by many researchers.

Most of the banks in Ethiopia are slowly moving to the technological advancement. NBE and Bank customers are hoping to see the implementation of Mobile banking service more than what it operates now. Because the time wasted in traveling for search of bank branches and the long waiting time to access the account is disappointing to the bank customers. In the transition of their services to the internet and mobile banking system, the support from the Government and NBE should be significant.

Therefore, this study will contribute to the adoption of mobile banking and delivery of financial services in a context where a government's involvement is significant. This study attempts to answer the following research questions:

- What are the practices of adopting mobile banking service in the banking industry?

- What are the challenges of the adoption of mobile banking service in the country?
- What is expected from the government regarding the adoption of mobile banking service in the country's banking industry?
- What are the driving forces towards the adoption of mobile banking service?

Objectives of the Study

General Objective

The study aims at assessing the current practice of Mobile Banking Services and its benefits and challenges in Addis Ababa, Ethiopia.

Specific Objectives

This study on Mobile Banking in Ethiopia: Practice, Challenges and Opportunities assume the following specific objectives:

1. To explore the current practice of mobile banking service in Addis Ababa.
2. To identify the benefits realized by banks in the adoption and practice of mobile banking to complement their service delivery channels.
3. To determine the benefits realized by bank customers and the Bank from the use of Mobile banking service in Addis Ababa.
4. To pinpoint the major challenges for the advancement of mobile banking service in Addis Ababa.
5. To identify the driving forces towards the adoption of mobile banking service in the banking industry.
6. To identify the existing opportunities for the adoption of e-banking service in Ethiopia.

Significance of the Study

Since Mobile banking operation is at an infant stage in Ethiopia, this study will help to fill significant knowledge gaps about mobile banking landscape in Ethiopia; thereby it will give insight to researchers and students about the problem and stimulate further investigation of the issue. The study was focusing on the current practices, opportunities and challenges of mobile banking in the country and forward constructive recommendations on identified problems which needs to be improved. Moreover, this study will help banks to benefit from the adoption of this technology. In addition, the findings of this study will be useful for both the Banks and their customers who are directly involved in Mobile Banking activities of the country. Firstly, service providers can use the study to evaluate themselves on the many avenues and platforms that mobile banking affords them. Secondly, the findings of this study can be used by mobile phone users to improve or expand the usage of their phones effectively towards all the services availed to them.

Scope and Limitations of the Study

The study is confined to assess the practice, opportunities and challenges towards the implementation and practice of mobile banking service in the city of Addis Ababa based on selected commercial banks that provide such service and selected customers who are using such facilities from their banks. For the sake of uniformity and due to their more involvement in various types of mobile banking services by different providers, only data that was obtained from commercial banks have been used in this study.

Other banks which are yet to start such services were not considered in this study. Moreover, the study focuses only on the assessment of the opportunities and challenges of the practice and development of mobile banking from the viewpoint of the banks' activities and customers' overviews of the service in Addis Ababa.

The focus of this study is on the assessment of the opportunities and challenges for the adoption of mobile banking service of commercial banks in Addis Ababa. Owing to the initial stage of mobile banking services available in the country, it was very difficult to get secondary data as well as literature in this area from the country perspective. In addition methodological flaws, sample imperfections and placement biases may lead the conclusion of the study to specific population size issues.

Lack of relevant prior studies on this specific study and finding mobile banking users from those four commercial banks were the main challenges of this study. Owing to the initial stage of m-banking services available in Ethiopia, it was very difficult to get secondary data as well as literature in this area from the country perspective. In addition time and financial constraints was also become the main limitation of the study.

Organization of the Research

The research has been structured as follows. The first chapter discusses background of the study, statement of the problem, objectives of the study, significance of the study, and scope and limitations of the study. Chapter two contains a review of the literature including theories related to mobile banking, review of empirical studies, previous studies made on the same subject in Ethiopia and elsewhere in the world. The third chapter deals with the research design and methodology part including sources and type of data, study population and sample size, definition and description of study variables, and data analysis techniques used. The fourth chapter presents the results of the findings. Finally, chapter five provide the conclusions drawn from the study findings and forward feasible recommendations that would expand and improve further mobile bank services in Addis and in the country at large.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Theoretical Review

Introduction to Mobile Banking

Mobile Banking refers to provision and availability of banking and financial services with the help of mobile telecommunication devices. The scope of offered services may include facilities to conduct bank and stock market transactions, to administer accounts and to access customized information. Small Businesses can be defined according to nature and size. In terms of nature a small business as one run by an individual like in a sole proprietorship or a group of between two and twenty individuals like in a partnership.

Mobile banking is said to be a system which allows customers of a given financial institution to conduct a number of financial transactions through the use of a mobile device. Quick, C. (2009) stated that mobile banking is a facility that provides banking services like balance enquiry, funds transfer, bill payment, and transaction history via mobile phones. It is averred that the earliest mobile banking services were offered over short messaging service (SMS) banking.

Upon the inception of smart phones with WAP support in 1999, the first European banks commenced offering mobile banking on this platform to their customers. It is posited that since then hitherto, mobile banking has mostly been offered through SMS or the mobile Web. Mobile banking services are broadly grouped into three categories: account information, investments, support, and content services (Sidel, R., 2013).

Trends in Mobile Banking

The advent of the Internet has revolutionized the way the financial services industry conducts business, empowering organizations with new business models and new ways to offer 24 hour accessibility to their customers. The ability to offer financial transactions online has also created new players in the financial services industry, such as online banks, online brokers and wealth managers who offer personalized services, although such players still account for a tiny percentage of the industry.

Over the last few years, the mobile and wireless market has been one of the fastest growing markets in the world and it is still growing at a rapid pace. According to the GSM Association and Ovum, the number of mobile subscribers exceeded 2 billion in September 2005, and now exceeds 2.5 billion (of which more than 2 billion are GSM).

According to a study by financial consultancy Celent, 35% of online banking households will be using mobile banking by 2010, up from less than 1% today. Upwards of 70% of bank center call volume is projected to come from mobile phones. Mobile banking will eventually allow users to make payments at the physical point of sale. "Mobile contact less payments" will make up 10% of the contact less market by 2010. Many believe that mobile users have just started to fully utilize the data capabilities in their mobile phones. In Asian countries like India, China, Bangladesh, and Philippines, where mobile infrastructure is comparatively better than the fixed-line infrastructure, and in Europe 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 while traveling, receiving online updates of stock price or even performing stock trading while being stuck in traffic. According to the

German mobile operator Mobilcom, mobile banking will be the "killer application" for the next generation of mobile technology.

Based on the study made in Kenya by Wambari Andrew in 2009, mobile devices, especially smart phones, are the most promising way to reach the masses and to create "stickiness" among current customers, due to their ability to provide services anytime, anywhere, high rate of penetration and potential to grow. In the last ten years, banks across the globe have invested billions of dollars to build sophisticated internet banking capabilities. As the trend is shifting to mobile banking, there is a challenge for CIOs and CTOs of these banks to decide on how to leverage their investment in internet banking and offer mobile banking, in the shortest possible time. The proliferation of the 3G (third generation of wireless) and widespread implementation expected for 2007–2011 will generate the development of more sophisticated services such as multimedia and links to m-commerce services.

Benefits of Mobile Banking

Pallab S. and Munish M. (2013) analyzed the benefits of online banking from the viewpoint of customers and banking sector in general as per below.

Benefits to Customers

General banking customers have been significantly affected by the advent of internet banking revolution.

a) A banking customer's account is extremely accessible with an online account.

- b) Through mobile banking customer can operate his account remotely from his/her office or home. The need for going to bank in person for every single banking activity is dispensed with.
- c) Mobile banking lends an added advantage towards payment of utility bills. It eliminates the need to stand in long queues for the purpose of bill payment.
- d) Most, if not all, services that are usually available from the local bank can be found on a single handset.
- e) Sharp growth in credit card/debit card usage can be majorly attributed to mobile banking. A customer can shop globally without any need for carrying paper currency with him.
- f) By the medium of m-banking, banks are available 24x7 and are just a finger click away.

Benefits to Banking Sector

Pallab S. and Munish M. (2013) have also stated that, in addition to banking customers, growth of E-banking infrastructure in general and mobile banking in particular has proved to be extremely beneficial to banks and overall bank organizations on account of following:

- a) The concept of mobile banking has immensely helped the banks in putting a tab over their specific overheads and operating cost.
- b) The rise of mobile banking has made the banks more competitive. It resulted in opening of better prospects and avenues for banking operations.

c) The mobile banking has ensured transparency of transactions and facilitated towards removing the documentation requirements to a major extent, since majority of records under an e-banking set up are maintained electronically.

d) The reach and delivery capabilities of mobile, enabled banks, proves to be significantly better than the network of physical bank branches.

Adoption of Mobile Banking

During the past decade, a considerable amount of research on mobile finance services has emerged. Majority of these studies applied research models and frameworks traditionally used within the IS literature (Hoehle & Huff, 2009). Among the different models that have been proposed, the Technology Acceptance Model (TAM) (Davis, 1989), adapted from the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980), appears to be the most widely accepted among information systems researchers. The TAM posits that a user's adoption of a new information system is determined by that user's intention to use the system, which in turn is determined by the user's beliefs about the system. The TAM further suggests that two beliefs – perceived usefulness and perceived ease of use – are instrumental in explaining the variance in users' intentions. As Davis (1989) noted, future technology acceptance research must address how other variables affect usefulness, ease of use and user acceptance. Therefore, perceived ease of use and perceived usefulness may not fully explain behavioral intentions towards the use of mobile banking, necessitating a search for additional factors that can better predict the acceptance of mobile banking. Another theory pertains to the adoption of new technology is the Diffusion of Innovation Theory by Rogers (1983). According to Rogers (2003, p.175), there are five perceived characteristics of innovation that can be used to form a favorable or unfavorable attitude toward an innovation, namely: relative advantage, compatibility, complexity, trialability, and observability. Based on that, we

will use Tan and Teo (2000) and Rogers (2003) framework to test the influence of several factors on mobile bank services adoption. Six factors were included and those factors are:

1) **Self efficacy:** An individual's self confidence in his or her ability to perform a behavior (Taylor and Tod, 1995)

2) **Trailability:** The extent users would like an opportunity to experiment with the innovation prior to committing to its usage (Agarwal and Prasad, 1997)

3) **Compatibility:** The degree to which an innovation is viewed as being consistent with existing values of users (Agarwal and Prasad, 1997).

4) **Complexity:** The degree to which an innovation is considered relatively difficult to understand and use (Taylor and Tod, 1995).

5) **Risk:** The perceived sense of risk concerning disclosure of personal and financial information (Tan and Teo, 2000).

6) **Relative advantage:** The extent to which a person views an innovation as offering an advantage over previous ways of performing the same task (Taylor and Tod, 1995).

Risks towards Mobile Banking

To understand the risks associated with mobile banking, it is necessary to separate mobile banking from the broader arena of mobile financial services and products. Mobile financial services involves the use of a mobile device for transfers (originating wire or automated clearing house (ACH) transactions), marketing, banking, or payments (person-to-person or person-to-business transactions), while mobile banking allows customers of an insured depository institution to conduct banking activities, such as

checking balances, receiving account alerts, or making bill payments, through a smartphone or tablet. Mobile financial services, of which mobile banking is a subset, involve nonbank third parties. As such, this study focuses only on mobile banking because of the unique and ongoing risks faced by financial institutions that offer this service.

Mobile Banking Risk Identification

Mobile banking is one of the emerging Information and Communication Technologies (ICT) elements that have changed the operations of the banking sector. It refers to the execution of financial services using mobile communication techniques together with mobile devices [International Telecommunications Union (Geneva), 2013]. According to Devadevan, 2013, mobile banking services can be classified into Short Message Services (SMS) Banking, Application (Software) oriented, and Browser (Internet) based model. Banks are introducing m-banking in order to take advantage of high mobile phone penetration around the world and more specifically in Africa (Tiwari, 2006). However, in developing countries for example both in Sub-Saharan Africa and North Africa, there are most frequently reported obstacles. Globally, obstacles for mobile banking can mean the confronting events or difficulties which hinder the adoption of certain technology or confronting events which are contrary to the adoption of certain technology. For instance, 80% of adults in Sub-Saharan Africa had no formal accounts and 60% in North Africa (Demirgüç-Kunt, A., & Klapper, L. F., 2012). This implies that, apart from adoption of ICT for financial services and especially mobile banking service still there are obstacles facing the effectiveness of the technology.

A study of Laforet (2005) that focused on investigating consumers' attitudes towards online and mobile banking in China revealed that fear of security risks to be the main

reason for the rejection of internet banking whereby, low computer technological skills and Chinese traditional cash-carry culture are associated to be the main factors for rejection.

Furthermore, a study by Iddris (2013), on Barriers to Adoption of Mobile banking in Ghana states four main reasons contributing to the rejection of mobile banking by the consumers to include: poor knowledge about mobile banking, low consumers' attitude to learn about mobile banking, poor telecommunication network and enormous consumers' preference for traditional means of banking instead of mobile enabled banking services.

Mobile Banking Risk Assessment

Once bank management understands the risks posed by mobile banking and the potential strategies for mitigating those risks at a high level, the final step in the process is to apply those general concepts to the specific products and services offered by the bank. This begins with completing a risk assessment based on bank-specific factors. To complete an effective risk assessment, bank management should:

- Understand the network architecture and mobile banking technology solution(s) being used.
- Know how the mobile banking application is designed, understand what features are being used, and be aware of the threats to the application.
- Identify the wireless transmission protocols and data transmission media being used.
- Understand what data the application stores and processes, as well as how this information is stored.
- Know the methods of attack to which the application is vulnerable and which are the most common. Identify controls to prevent attacks and/or data loss.

- Have a robust vendor management process. If a third party (or parties) is involved in offering mobile banking, complete a thorough due diligence to understand all the preceding risks assessment elements as they apply to that third party.

One possibility is to use a data-centric approach to risk assessment and ongoing risk management. Data discovery and classification are two essential initiatives that lay the foundation for protecting data no matter where this information resides. If a financial institution does not know what kind of data it has or where they reside, it cannot apply the appropriate policies and controls to protect this information. This especially applies to mobile banking and the risks and controls discussed in this article. The following table is a simple data classification chart that a bank can fill out that could be used to identify critical data and associated control requirements based on the implementation of a mobile banking solution.

Banking in Ethiopia

Banking History in Ethiopia

A reference to the Ethiopian history reveals that the first bank in the country, Bank of Abyssinia was founded during the reign of Emperor Menelik II in February 1905. Due to a foreign domination of its management (mainly the British), the then Bank of Abyssinia was forced to dissolve and in its place was established the Bank of Ethiopia in 1931 whose management was still left to foreigners due to the then lack of skilled manpower in the country. The Bank of Ethiopia was later replaced by the State Bank of Ethiopia soon after the war with Italy. The latter was the first bank in the country fully controlled and owned by the Ethiopian government. In the meantime, however, a number of foreign banks had opened their branches in the country, most of them with an interest

to have control over the nation's economy. It was the State Bank of Ethiopia that gave rise to the present Commercial Bank of Ethiopia (CBE) and National Bank of Ethiopia (NBE).

However, following the 1991 takeover by the present government and accompanying encouragement of private investment, a number of private banks have emerged in the country's financial sector. Accordingly, Monetary and Banking proclamation No.83/1994 and the Licensing and Supervision of Banking Business No.84/1994 laid down the legal basis for investment in the banking sector. Consequently, shortly after the proclamation the first private bank, Awash International Bank was established in 1994 by 486 shareholders and by 1998 the authorized capital of the Bank reached Birr 50 million. Dashen Bank was established on September 20, 1995 as a share company with an authorized and subscribed capital of Birr 50.0 million. 131 shareholders with subscribed and authorized capital of 25 million and 50 million founded bank of Abyssinia. Wegagen Bank with an authorized capital of Birr 60 million started operation in 1997. The fifth private bank, United Bank was established on 10th September 1998 by 335 shareholders. Nib International Bank was started business on May 26, 1999 with an authorized capital of Birr 150 million. Cooperative Bank of Oromia was established on October 29, 2004 with an authorized capital of Birr 22 million. Lion International Bank with an authorized capital of Birr 108 million started operation in October 02, 2006. Zemen Bank started operation on June 17, 2008 with an authorized capital of Birr 87.0 million. Oromia International Bank has started operation on September 18, 2008 with an authorized capital of Birr 91 million. In addition, recently Buna International Bank and Birhan International Bank are started operation in the country (NBE, 2009).

Review of Commercial Banking Practices in Ethiopia

In Ethiopia, 16 private and two state owned banks are operating at the end of May 2016. Despite a rapid increase in the number of financial institutions since financial liberalization, the Ethiopian banking system is still underdeveloped compared to the rest of the world. The use of checks is mostly limited to government institutions, NGOs and some private businesses. Commercial banks in Ethiopia provide the same services with the same operational style that they used to offer before decades. The common banking functions provided by public and private banks in Ethiopia are deposit mobilization, credit allocation, money transfer and safe custody. Banks in Ethiopia are unable to improve customer service, design flexible and customized products, and differentiate themselves in a market where product features are easily cloned. Ethiopian banking is unable to come from long way of being sleepy to a high proactive and dynamic entity.

According to the Newsletter that has published on 2012 by making finance work for Africa, Ethiopia's financial system is small and largely dominated by the state. Public banks account for 67% of total deposits and 55% of loans and advances. Government dominates lending, controls interest rates, and owns the largest bank, the Commercial Bank of Ethiopia (CBE) whose assets represent about 70 percent of the sector total, as of April 2012. The Central Bank, the National Bank of Ethiopia, has a monopoly on all foreign exchange transactions and supervises all foreign exchange payments and remittances. By June 2011 the private credit to GDP ratio for Ethiopia was around 9% compared with the average of 30% for sub-Saharan Africa. The financial sector has recently been experiencing a reversal of financial deepening. The broad money to GDP ratio declined from 27 percent in 2007-2008 to 25 percent in 2008-2009, while the ratio of domestic credit to GDP decreased from 32 percent to 27 percent over the same period. Negative real interest rates (stemming from high inflation and low deposit rates), high reserve money growth, bank-by-bank credit ceilings, and a lack of competition in the banking sector have contributed to the economy's continued

demonetization in recent years, which is posing increasing risks to financial stability. Authorities have made commitments to promote monetization, improve liquidity management and achieve positive real interest rates in the financial sector, but reversing demonetization remains a major challenge.

Ethiopia's banking sector included 16 commercial banks in 2012. While the state has recently allowed the local private sector to participate in banking which brought about a rapid expansion of private banks, foreign ownership and branch operations remain strictly barred. Private Banks have generally outperformed their state-owned counterparts and their market share of resource mobilization exceeds that of public banks, with market share of loan collections and deposits rising to 49 percent and 52 percent in 2007-2008. However, the share of new loans disbursements controlled by private banks for the same period decreased, and stood at 43.3 percent in 2007-2008. The banking sector as a whole, while remaining relatively sound, is characterized by excess liquidity. Non-performing loan ratio standing at 1.8 percent as of March 2012 appears unusually low, especially given the strong domestic credit expansion.

Mobile banking is an underserved sector with strong growth potential. Very low cell phone penetration has prevented the rapid development of mobile banking, which has taken place elsewhere in Africa. However, the mobile phone industry has just started to discover Ethiopia as a relatively large, untapped market. A number of operators are thus preparing to launch, or have already launched, payment and transaction systems supported by mobile technology.

The total capital of the Ethiopian banking industry has surged by 19.0 percent in the 2014/15 budget year noted the National Bank of Ethiopia in its flagship publication; Annual Report on Ethiopian Economy. According to the Report, the total capital of the Ethiopian banking industry has reached 31.5 billion Birr by the end of June 2015. That is a 19.0 percent surge as compared to the industry's capital in 2013/14 budget year. The

reason behind such a rise in capital is explained by an injection of more capital by a number of banks, the report said.

As a result, the share of private banks in total capital marginally increased to 56.5 percent from 55.4 percent last year while that of Commercial Bank of Ethiopia (CBE) remained at 34.0 percent. Meanwhile the banks opened 485 new branches in the budget year, raising the total branch network in the country to 2693 from 2208 last year. As a result, bank branch to population ratio declined from close 1:39,834 people to 1:33,448 in the period under consideration.

The significant branch expansion was undertaken by CBE with 127 branches, followed by Awash International Bank with 55 branches. The remaining banks opened less than 50 branches each. Despite more branch expansion by public banks, their share in total branches slightly went down to 41.9 percent from 45.4 percent last year. About 35.5 percent of bank branches were in Addis Ababa, during the review period. Banks, insurance companies and microfinance institutions are the major financial institutions operating in Ethiopia.

The number of private banks in the country has started to mushroom following the downfall of the socialist regime 25 years ago. Now, the country is home to 18 banks, of which 16 are private while the remaining two are state-owned.

Challenges of Adopting Mobile Banking in Ethiopia

In his study, Gardachew (2010) mentioned that Ethiopian banking industry faces numerous challenges to adopt electronic banking system and grab the opportunities presented by ICT applications in general. The Key Challenges stated were:

- **Low level of internet penetration and poorly developed telecommunication infrastructure:** Lack of infrastructure for telecommunications, Internet and

online payments impede smooth development and improvements in e-commerce in Ethiopia. Most rural areas of the country, where the majority of small and medium businesses are concentrated, have no Internet facilities and thus are unable to engage in e-commerce activities.

- **Lack of suitable legal and regulatory framework for e-commerce and e-payment:** The existing commercial laws of the country do not properly and clearly address electronic contracts and signatures. Gardachew added that Ethiopia has not yet enacted legislation that deals with e-commerce concerns including enforceability of the validity of electronic contracts, digital signatures and intellectual copyright and restrict the use of encryption technologies.
- **Inadequate banking system and political instabilities in neighboring countries:** Political and economic instabilities in Somalia, Southern Sudan, and Eritrea are threatening traits that do not provide a very conducive environment for e-banking in Ethiopia. Political instabilities inevitably disturb smooth operations of business and free flow of goods and services.
- **High rates of illiteracy:** Low literacy rate is a serious impediment for the adoption of mobile banking in Ethiopia as it hinders the accessibility of banking services. For citizens to fully enjoy the benefits of mobile banking, they should not only know how to read and write but also possess basic ICT literacy.
- **High cost of Internet:** The cost of Internet access relative to per capita income is a critical factor. Compared to the developed countries, there are higher costs of entry into the e-commerce market in Ethiopia. These include high start-up investment costs, high costs of computers and telecommunication and licensing requirements.

Challenges and Opportunities of Mobile Banking Services

Challenges

Infrastructure is necessary for the successful implementation of mobile payments. Proper Infrastructure for electronic payments is a challenge (Taddesse and Kidane, 2005). For electronic payments to be successful there is the need to have reliable and cost effective infrastructure that can be accessed by majority of the population. Electronic payments communication infrastructure includes computer network such as the internet and mobile network used for mobile phone. In addition, banking activities and operations need to be automated. A network that links banks and other financial institutions for clearing and payment confirmation is a pre-requisite for electronic payment systems.

Mobile network and Internet are readily available in the developed world and users usually do not have problems with communication infrastructure. However, in Africa mobile networks and internet are not easily accessible. Worku (2010) noted that low level of internet penetration and poorly developed telecommunication infrastructure impedes smooth development and improvements in e-commerce and mobile banking in Africa. In a related work, by Mishra (2008) in Nepal, Telecommunication and electricity are not available throughout the country, which negatively affect the development of e-payments. According to Mishra (2008), the development of information and communication technology in Nepal is a major challenge for e-payments development. Since ICT is in its infant stages in Nepal, the country faces difficulty promoting e-payment development.

Opportunities

The high growth and penetration rates of mobile telephony that is transforming cell phones into banks in pockets in Africa is providing opportunities for countries on the continent to increase affordable and cost effective means of bringing on board the large numbers of the population that has been excluded from formal financial services for decades. Such a transformation is of interest not only for banks and Mobile financial institutions (MFIs) but also for governments and financial regulators as well as development partners who are providing support to improve the livelihood of African people through poverty reduction and sustained economic growth.

- Boosting domestic savings through expansion of financial services to the poor and rural populations
- Increased money transfers from the Diasporas at low costs – e.g., M-PESA IMT.
- Reduction in financial transactions costs, leading to lowering cost of doing business that will benefit SMEs and overall private sector development.
- Increased government revenues as a result increased corporate revenues from booming m-banking, improved corporate earnings, etc.

The main challenge to find proper and relevant empirical review for this research was the non-availability of prior studies on the subject matter. This is considered as a gap for this study and it will pave the way for researchers to conduct further studies on this specific topic.

Empirical Evidence

This section reviewed empirical studies pertinent to challenges and opportunities of mobile banking practice in Ethiopia. Some related studies are conducted by different researchers in different parts of the world. However, there are limited numbers of

studies conducted in Ethiopia on mobile banking technology. The related one is done by (Gardachew, 2010) which is conducted a research on the opportunities and challenges of e- banking in Ethiopia. The study was focused on analyzing the status of electronic banking in Ethiopia and investigates the main challenges and opportunities of implementing e-banking system. There was an article on Birritu magazine No.119 which was published in February 2015. This research has referred these two related studies for strengthen the empirical view.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

Research Approach and Design

This research employs exploratory research design approach in which descriptive analysis has been adopted. The essential goal of this method is to tackle a given research question from any relevant angle, making use where appropriate of previous research and/or more than one type of investigative perspective. This approach is far more comprehensive than attacking a problem from only one point of view and, with the emergence of strategies and tools for blending these different types of data, allow for the crossing of disciplinary boundaries like never before. One of the most advantageous characteristics of conducting mixed methods research is the possibility of triangulation, i.e., the use of several means (methods, data sources and researchers) to examine the same phenomenon. Triangulation allows one to identify aspects of a phenomenon more accurately by approaching it from different vantage points using different methods and techniques.

Exhaustive literature review was conducted in order to identify the most serious obstacles towards the adoption of mobile banking. Since the development of mobile banking in Ethiopia is a new phenomenon, descriptive research design helps the researcher to identify the major challenges to the development of mobile banking through an in-depth interview with selected commercial banks officials, which started mobile banking service, and literature search. An interview was also conducted with officials of National Bank of Ethiopia banking supervision department as this issue has been raised by the regulatory body.

Sources and Types of Data

Both primary and secondary data have been collected to meet the objectives of the study. The primary data was collected from selected commercial banks officials and mobile banking users through semi-structured interview and questionnaire. Secondary data was also collected from NBE, Ethio-Telecom and other sources. The collected primary data has been analyzed using qualitative and quantitative (mixed methods) approaches.

Data Collection Instruments

The study has been conducted by collecting data from both primary and secondary sources. Primary data was collected from the respondents based on a structurally designed questionnaire. It included both close-ended and open-ended questions. In addition, unstructured interview with higher officials of the National bank of Ethiopia and from each bank IT managers has been conducted to collect supporting data. Secondary data was collected from the websites of the respective commercial banks. Since the study concentrated on the banking operations in Addis Ababa area, the data collection did not include the activities of outlying branches of selected commercial banks.

Population and Sample Design

Study Population

Currently there are sixteen private banks operating in Ethiopia. Of those sixteen, about eight of them are fully implementing mobile banking services. These are Dashen Bank, Zemen Bank, Wegagen Bank, United Bank, Awash Bank, and Nib International Bank. In order to get sufficient and reasonable data that represents the whole practices of mobile banking in Ethiopia, this study focuses on three commercial banks and their

relevant users of such service. According to sources from National Bank of Ethiopia, the number of people who are using mobile banking service in Addis Ababa is more than fifty thousand, (Birritu Newsletter February, 2012).

Sampling Technique and Size

Both private and public commercial banks have been included as a target population. In this study, the student researcher has applied purposive or convenience sampling technique to select representative samples from among the target population. Therefore, four commercial banks were selected and of those four, one is state owned and the other four are private commercial banks. The purposive sampling technique is suitable method for this research, as mobile banking services are commonly implemented in most of the Banks in the country with different levels. The inherent bias of the method contributes to its efficiency, and the method stays robust even when tested against random probability sampling. Choosing the purposive sample is fundamental to the quality of data to be collected.

Simultaneously customers from those selected four banks were also be interviewed and requested to fill out the questionnaires in order to assess the situation on the other side of the service. Because of cost considerations and in line with studies on consumer attitude and adoption of mobile banking, the sample size has been decided based on the objective method sample size of probability sampling techniques. According to the chosen methodological research approach the quantitative data was analyzed to triangulate the data obtained through questionnaire and interview. Statistical descriptive techniques might also be applied to find out the respondents demographics and general characteristics in order to provide a descriptive profile of the respondents.

Data Analysis Techniques

In order to meet the stated research objectives, the collected data have been analyzed based on the nature of the objective. Hence data analysis consists of examining, categorizing, and may be tabulating the evidence, to address the initial proposition of a study (Yin, 1989; pp. 105). 'The student researcher' analyzed the data collected through survey to statistical population concerning the practice of mobile banking services. The data collected via questionnaires are analyzed with descriptive statistics using tabular approach. Furthermore, Wolcott (1994) cited in Creswell (2003; pp. 184), suggested that qualitative research is fundamentally interpretative i.e. the researcher makes an interpretation of the data. Thus, the data that was collected from the questionnaire of the customers have been interpreted qualitatively and quantitatively as well. In other words, this research applied both analysis of quantitative data and interpretation of qualitative data to bring a reasonable outcome on the subject matter.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

Introduction

Data collected through questionnaires and interviews have been analyzed using both quantitative and qualitative analysis techniques as it are mentioned on the methodology part of this study. These analysis and discussions will contribute a lot for identifying major out puts of the study and for forwarding significant recommendations.

A total of 120 questionnaires were distributed to four purposely sampled commercial bank clients, one state owned bank (commercial bank of Ethiopia) and three private banks (Dashen bank, Zemen bank and Wogagen bank). Out of the total 120 questionnaires, 98 of them were properly filled and returned which represented 82% response rate. Apart from the questionnaire, an interview has also been done with those four sampled banking officials specifically about the practices and challenges of mobile Banking.

Demographic Information of Respondents

The participants of this study were composed of people from different walks of life and have different academic background. Therefore their reflection towards mobile banking service and challenges against the implementation and improvement of this service have presented very differently based on their frequency of using the service and their level of education. The following discussion shows these differences. The demographic profile of respondents, participated in this study was shown in table 4.2.1 as follows.

Table 4.2.1 Respondents’ Demographic profile of Mobile Banking users

| Variable | Classification of variables | Frequency | Percentage |
|-------------------|-----------------------------|-----------|------------|
| Gender | Male | 60 | 61% |
| | Female | 38 | 39% |
| Educational level | Diploma | 7 | 7% |
| | Bachelor degree | 54 | 55% |
| | Master’s degree | 37 | 38% |

Source: SPSS Output From Survey Data, 2016

Table 4.2.2 Respondents’ Demographic profile of Bank officials

| Bank Name | Establishment Year | Job Position | Experience at the Job | Gender | Academic Status | Year of starting Mobile Banking |
|-----------------------------|--------------------|------------------------------|-----------------------|--------|-----------------|---------------------------------|
| Commercial Bank of Ethiopia | 1980 EC | IT Manager | 16 Years | Male | BA Degree | 2015 |
| Zemen Bank | 2008 EC | Software Development Manager | 8 Years | Male | Masters | 2014 |
| Dashen Bank | 1995 EC | IT Manager | 15 Years | Male | Masters | 2015 |
| Wogagen Bank | 1997 EC | IT Manager | 16 Years | Male | BA Degree | 2015 |

Source: SPSS Output From Survey Data, 2016

The researcher has purposely selected the Bank officials who are directly related with the implementation and management of mobile Banking services at all the selected Banks. As shown in the table all the officials are male and served more than seven years on the same department. However they have different educational background of which 50% were first degree holders and the remaining 50% were having Master's degree. As reported in the above table mobile banking service is started very recently in the country because of various challenges in terms of technology and skilled man power.

Table 4.2.3 Respondents' Composition of Banks which they are working with

| Bank | Number of Respondents representing the Bank | Percentage |
|-----------------------------|--|-------------------|
| Commercial Bank of Ethiopia | 34 | 35% |
| Zemen Bank | 25 | 26% |
| Dashen Bank | 21 | 21% |
| Wogagen Bank | 18 | 18% |

Source: SPSS Output from Survey Data, 2016

Table 4.2.3 summarizes the result of the respondents whom they are representing the specific Bank which they are working with. The result indicated that out of four selected Banks, Commercial Bank of Ethiopia has larger number of mobile banking service users. Zemen Bank is ranked second with the 26% of the respondents are working with it. Dashen Bank and Wogagen Bank have the least number of mobile banking users as it is indicated on the table above. On the other hand, the summary on the above table disclosed that Commercial Bank of Ethiopia has done the maximum effort to attract more customers in the area of mobile banking service.

Table 4.3 Links and interactive programs of Banks for Mobile Banking users

| Bank | USSD dialing Code on Mobile | Mobile Data(Internet) |
|-----------------------------|-----------------------------|--------------------------|
| Commercial Bank of Ethiopia | *889# | CBE mobile Apps |
| Zemen Bank | *844# | Zemen bank mobile Apps |
| Dashen Bank | *996# | Dashen bank mobile Apps |
| Wogagen Bank | *866# | Wogagen bank mobile Apps |

Source: SPSS Output from Survey Data, 2016

The above table indicated that, all the selected banks are implementing offline dialing service for their mobile banking service customers. Hence, all the customers are able to enjoy the service via their mobile phones by dialing the relevant numbers (USSD Codes). However all customers should personally go to their respective banks and get registered by filling the specific form which is designed for accessing mobile banking service. Therefore, from the above table, it is possible to conclude that the selected banks are doing their best to keep the mobile banking service is going well. The table also implies that some private banks are becoming more competitive with the biggest state owned Commercial Bank of the country in the adoption and application of mobile banking services.

Table 4.4 Security and Operational issues related to Mobile banking service

| S. No | Security and Operational Issues | Banks | | | |
|-------|--|-------|-------|--------|---------|
| | | CBE | Zemen | Dashen | Wegagen |
| 1 | Are security measures in place to prevent the web site information from being altered? | Yes | Yes | Yes | Yes |
| 2 | Is the Bank charging the customers for getting Mobile Banking Services | Yes | No | No | No |
| 3 | Does the bank have procedures in place for interruption in service of mobile banking for the customer? | No | No | No | No |
| 4 | Is mobile banking training provided to employees? | Yes | Yes | Yes | Yes |
| 5 | Does the bank have a target market or trade area for mobile banking? | Yes | Yes | Yes | Yes |
| 6 | Are any policies and procedures in place to address activities beyond the traditional trade area? | Yes | Yes | Yes | Yes |

Source: SPSS Output from Survey Data, 2016

The above security and operational issues listed in the table related to mobile banking service are discussed below:

As per the data collected among banks that are currently providing the service, all banks are checking their internet connections and interactive programs continuously for its security and functionality. By doing so the Banks are following the status of the service and preparing themselves for prompt reaction once the problem created. On the other hand they believed that this service is very sensitive for different kinds of cyber-attacks

both internally and externally. In order to protect their customers from risk of losing bigger amount of money, all the four Banks have set a maximum limit of amount which is set by the National Bank of Ethiopia's directive. The directive clearly stated that the daily mobile banking transaction that involves debiting of an account by a person with a financial institution shall not exceed Birr 6,000.

Despite the fact that the operation and practice of mobile banking service in Ethiopia is at its infant stage, it is not free from the threat and exposures of those of global situations. Therefore Commercial Bank of Ethiopia and Zemen Bank are working with various international firms in order to strengthen their security cover and protecting their customers as well. On the other hand, Dashen Bank is still looking for a competitive international to sign a memorandum of understanding to working with them in long run. Wegagen Bank is also considering of this option but they still not established contacts with the international Information Technology firms. The common thing that all the selected Banks are performing is that they are trying to prevent the e web site information from being altered by taking security measures like firewall and secure socket layer (SSL). SSL is the standard security technology for establishing an encrypted link between a web server and a browser. This link ensures that all data passed between the web server and browsers remain private and integral.

CBE is charging a fraction of coins for all mobile banking services that they rendered for their esteem customers. The reason for charging for such a service is not to discourage customers from using this service but it is all about collecting small amount of bank service charge like other services that the Bank is rendering to the customers. However the amount of service charge is very small as compared to other face-to-face banking services. This is for inspiring customers to start using mobile banking. CBE is notifying all its mobile banking users about the service charge before they started using the service upon registration and filling up the mobile banking service application form. On the

other hand the remaining three Banks (Zemen, Dashen and Wegagen) are providing this service free of charge. In terms of service charge, the National Bank of Ethiopia (NBE) did not put any compulsory article for the Banks to be abided by according to the related directive which is released in January 2012 cited as “Regulation of Mobile and Agent Banking Services Directives No. FIS/01/2012.

Unfortunately all the selected Banks do not have proper written procedures and check list in place for an interruption of mobile banking services. However this does not mean that all the Banks are not putting a solution for the temporary interruption of the service. CBE is still designing a procedure both for the bank staffs that are responsible for mobile banking service and for the customers as well. Remaining Banks are also working towards developing clear and understandable procedures to be applied when service interruption occurred by advising NBE.

Mobile banking training is provided to those employees of the Bank who are responsible and accountable for it. The training provided by CBE, Zemen, and Wegagen Banks are continuous type on periodical basis. However Dashen Bank is delivering this training to the employees without proper schedule. When the training is available from different sources, employees from Dashen Bank will attend both in house training and other places outside of the Bank. All the selected Banks are planning to train and create better awareness for their customers as well. Zemen Bank is updating most of its mobile banking customers about the changes and conditions of the service while they are visiting the Bank in person. The entire selected Bank officials believed that providing constant mobile banking training to employees is highly appreciated the Banks to provide better, current and secured services to their customer. It is noticed that all the respondents of the interview stated that the current training systems and procedures are not sufficient in the context of the growing trends of mobile banking practice in the country. The challenge that has mentioned by all the officials to participate in more

training is that there are no many training providers in the country. On the other hand, inviting training providers from abroad is too much expensive for all the Banks in the country.

In terms of expanding the mobile banking service for higher number of customers all the Banks have developed different strategies. In the short run, CBE is focusing on the existing customers to promote the advantage of mobile Banking through mass media advertising. The Bank has also long term plan to introduce this service throughout the country. The launch of mobile banking service for Zemen Bank has brought positive feedback from its customers. According to the official of the Bank, Zemen Bank is the only Ethiopian Bank which deliver all banking services by two branch offices and their plan is to minimize the physical appearance of their customers by prevailing on-line banking services. Therefore they are working very hard to increase the volume of their mobile banking users through advertising, sponsorship and one-to-one communication especially with their current clients. Dashen Bank and Wegagen Bank are also aiming to intensify the practice of mobile banking service by distributing pamphlets and by notifying their existing customers about the advantage and easiness of using mobile banking services to their day-to-day activities. All the Banks are emphasized on both individual and organizations while they are expanding the use of mobile banking services. The main challenge that are raised by all the Banks are that the widely acceptance of traditional banking activities and the level of resistance for change by most of the banking service users.

As it is mentioned in the above paragraph and summarization of all Bank officials' responses, convincing most of the customers to use mobile banking service do not seem an easy task. Addressing banking activities beyond the traditional trade area is the main driving forces of delivering banking products to the customer through electronic channels especially for those of privately owned Banks. It is noted that all selected

Banks have policies and procedures in place to introduce and properly address the ease and advantage of using mobile banking services. Using mobile as a channel of banking service delivery method is resulted from the application of their policies and procedures to provide new banking service for the customer at any place rather than branch based traditional service. All selected Banks have developed policies and procedure in order to introduce and provide mobile banking service to large number of users. They are believed that the banking industry in the country is highly competitive in terms of rendering technological related services. To be successful and profitable in this very sensitive market, Zemen, Dashen and Wegagen Banks are keep on busy on developing and introducing brand new banking services which are allowed by the regulatory authority. Their main concern is to attract new customers to their respective Banks. However CBE is aiming on improving quality of their traditional banking services as well as virtual banking services. The main difference in this view is that CBE's main focus is not about attracting new clients unlike those of the remaining three Banks.

Table 4.5 Benefits of implementing Mobile banking service for the Banks

| S. N | Type of Benefits | Banks | | | |
|------|----------------------------|-------|-------|--------|---------|
| | | CBE | Zemen | Dashen | Wegagen |
| 1 | Attracting New Customers | No | Yes | Yes | Yes |
| 2 | Improving Images | Yes | Yes | Yes | Yes |
| 3 | Profit Maximization | No | No | No | No |
| 4 | Existing Customer Coverage | Yes | Yes | Yes | Yes |
| 5 | Cost Reduction | No | Yes | No | No |
| 6 | Efficiency Improvement | Yes | Yes | Yes | Yes |

Source: SPSS Output from Survey Data, 2016

As reported on table 4.5 in the above table, all of the banks have achieved various types of benefit by introducing and providing mobile banking services for their customers. The outcomes of the respondents are discussed in the following paragraphs.

All of those three privately owned Banks (Zemen, Dashen and Wegagen) have brought positive outcomes in terms of attracting new customers to their business. They believed that the introduction of 3G and 4G internet connection by Ethio Telecom has played significant role on mobile phone users to be part of the latest technological banking services through their mobile device. However CBE is not attracting new customers by implementing mobile banking service. The Bank believes that at this stage the main focus is about continuous improvement of the service to the existing customers.

All of the Banks are stated that providing mobile banking service to their customers has a reward of building better image as compared to other Banks that are operating in the country but not yet started providing such a service. Those privately owned Banks are measuring this by keeping a record of new and existing customers who are requesting to use this service. On the other hand, CBE indicated that the numbers of existing customers who are applying to use the mobile banking service are increasing during the last three quarters.

All of the officials of Banks' are replied that the introduction of mobile banking service by itself does not bring an impact on the yearly profit of them. They believed that it might have some contribution towards the volume of profit but the amount is immaterial at this time.

Even though all of the Banks are scoring better points on the coverage of mobile banking service for their existing customers, CBE is taking the leading place. Those three private Banks are focusing on both sides (expanding the coverage towards the existing

customers and attracting new customers), whereas CBE is mainly working on the expansion of this service for its existing customers.

Since the practice of mobile banking is at its preliminary level, most of the Banks are not reducing their cost as a result of rendering such a service. However Zemen Bank believed that the introduction of mobile banking to their customers has brought massive cost reduction.

In terms of banking service providing quality, all of the Banks are acknowledged that the starting of mobile banking service has played greater role by improving their efficiency level in the eye of their customers.

Table 4.6 Types of Services delivered by Mobile banking service of the Banks

| S. N | Type of Benefits | Banks | | | |
|------|---------------------------------|-------|-------|--------|---------|
| | | CBE | Zemen | Dashen | Wegagen |
| 1 | Fund Transfer | Yes | Yes | Yes | Yes |
| 2 | Creating New Bank Account | No | No | No | No |
| 3 | Insurance Premium Payment | No | No | No | No |
| 4 | Credit Application | No | No | No | No |
| 5 | Balance inquiry | Yes | Yes | Yes | Yes |
| 6 | Bill presentment and payment | No | No | No | No |
| 7 | Purchase of Goods and Services | Yes | Yes | Yes | Yes |
| 8 | Periodic Utility bills Payments | Yes | No | No | No |

Source: SPSS Output from Survey Data, 2016

According to the above table 4.6, some of the mobile banking services are commonly provided by all Banks. Fund transfer, balance inquiry and making payments while purchasing goods and services up to a maximum daily limit are those services which are shared and provided by all of the Banks mobile banking packages. At the same time all of the Banks are not offering services like creating a new bank account, making payments to the customers' insurance providers and making payments for all types of bills except the monthly utility bill payments.

CBE is providing payment facilities for its customers against their monthly utility bills. However this process is not properly working for most of the customers as the respondent stated during the interview time. Dashen and Wegagen Banks are also working on the rendering of this service to their customers. Zemen Bank is still not interested to offer utility bill payments facility in the near future.

Table 4.7 Main Challenges of providing Mobile banking service for the Banks

| Banks | Main challenges that the Bank has faced |
|--------------|--|
| CBE | <ul style="list-style-type: none"> ➤ Convincing majority of the bank users to start using mobile banking ➤ Lack of well trained and efficient staff in mobile banking area ➤ Lack of globally accredited training providers of the subject matter ➤ Unclear and absence of suitable legal and regulatory frameworks ➤ Nonexistence of financial networks that links different banks ➤ Low level of internet connection and poorly developed telecommunication infrastructure and high cost of internet |
| Zemen | <ul style="list-style-type: none"> ➤ Lack of globally accredited training providers of the subject matter ➤ Unclear and absence of suitable legal and regulatory frameworks ➤ Nonexistence of financial networks that links different banks ➤ Low level of internet connection and poorly developed telecommunication infrastructure, high cost of internet and |

| | security issues |
|----------------|---|
| Dashen | <ul style="list-style-type: none"> ➤ Lack of well trained and efficient staff in mobile banking area ➤ Lack of globally accredited training providers of the subject matter ➤ Unclear and absence of suitable legal and regulatory frameworks ➤ Nonexistence of financial networks that links different banks ➤ Low level of internet connection and poorly developed telecommunication infrastructure , and high cost of internet |
| Wegagen | <ul style="list-style-type: none"> ➤ Lack of well trained and efficient staff in mobile banking area ➤ Lack of globally accredited training providers of the subject matter ➤ Unclear and absence of suitable legal and regulatory frameworks ➤ Nonexistence of financial networks that links different banks ➤ Low level of internet connection and poorly developed telecommunication infrastructure, and high cost of internet |

Source: SPSS Output from Survey Data, 2016

According to the above table most of the challenges that all the Banks are facing are quite similar. Lack of well trained and efficient staff in mobile banking area, Lack of globally accredited training providers of the subject matter, Unclear and absence of suitable legal and regulatory frameworks, Nonexistence of financial networks that links different banks, Low level of internet connection and poorly developed telecommunication infrastructure are the major common challenges for the adoption and practice of mobile banking services in the country's banking industry.

Despite the quality and coverage of internet connection is showing improvement in recent years, it is still been a main challenge for banks not to provide mobile banking service widely. Ethio-Telecom is still expected to expand its internet and mobile network services throughout the country. Ethiopia's mobile penetration rate stands at Nine percent while sub-Saharan African penetration rate is more than 35 percent according to African Development Bank report of 2014. The country's mobile banking service

system is heavily depending on the state-owned corporation of Ethio Telecom in order to improve the quality of the services that the Banks will deliver to their customers.

Another big challenge that all of the Banks have mentioned is: lack of internationally accredited training institutions and lack of well-trained local staff. All of the Banks are looking for the relevant and specific trainings either online or face-to-face mode in order to be more competent in this specific service. However the price quoted for most of the trainings are very difficult to afford by most of the Banks.

The specific legal and regulatory framework which is currently applicable towards the use of mobile banking service is not clear and well aware especially by most of the customers. All of the Banks are complaining about the directives of the National Bank by saying that it failed to address all the points that could have seen with this specific banking service.

Another point that the Bank officials raised as a challenge in the practice and expansion of mobile banking is that of the nonexistence of financial networks that inter links them. They believed that if this facility would be in place in the country, it will play a greater role for customers of different banks to make mobile transactions easily.

Finally, even though it may be temporary, frequent network interruption is another challenge that affects the provision of mobile banking service among those banks that are currently providing the service. Therefore, from the above discussion it is possible to conclude that some of the Banks in the country have paving the way for the expansion of the use of mobile banking despite of those challenges. It is very hopeful that such challenges will be resolved in the coming periods and all the Banks are envisaging about the coming of the better days for banking services of the country.

Table 4.8 General practices of providing Mobile banking service for the Banks

| Banks | Evaluation of the practice of the use of mobile banking |
|----------------|--|
| CBE | <p>Current Practices and customer feedbacks are Fine and encouraging</p> <p>The service has high Potential, but customers still unaware of its possibilities</p> <p>Language barrier as most of the mobiles are operating in Latin words</p> <p>Expects good growth in coming years as the financial sector is transforming</p> <p>More effective and less restrictive, it is also safer than old payment systems.</p> |
| Zemen | <p>Customers are instantly connecting to the SMS banking services 24/7.</p> <p>Customers are able to take control of their account on their mobile from anywhere and at any time</p> <p>Customers are using more banking services by their mobiles</p> <p>Language barrier as most of the mobiles are operating in Latin words</p> <p>Expects good growth in coming years as the financial sector is transforming</p> |
| Dashen | <p>Current Practices and customer feedbacks are encouraging</p> <p>The service has high Potential, but customers still unaware of its possibilities</p> <p>Language barrier as most of the mobiles are operating in Latin words</p> <p>Expects good growth in coming years as the financial sector is transforming</p> <p>More effective and less restrictive, it is also safer than old payment systems.</p> |
| Wegagen | <p>Current Practices and customer feedbacks are encouraging</p> <p>The service has high Potential, but customers still unaware of its</p> |

| | |
|--|--|
| | <p>possibilities</p> <p>Language barrier as most of the mobiles are operating in Latin words</p> <p>Expects good growth in coming years as the financial sector is transforming</p> <p>More effective and less restrictive, it is also safer than old payment systems.</p> |
|--|--|

Source: SPSS Output from Survey Data, 2016

The above table summarizes the status of the general practices of mobile banking services by those of selected Banks. It showed that the overall practices and prospects of mobile banking services are performing very well in the eyes of the Banks. Despite there are some differences among the respondent of each bank regarding the existing opportunities of the service in the country, almost all of them are looking forward to widely implementing the mobile banking services for their customers. But late adopter opportunities, improvement in the banking habit of the society, sustainable economic growth in the country, increment of tourist inflow to Ethiopia, commitment of the government to facilitate the expansion of information communication technology (ICT) infrastructure and willingness among banks to cooperate in building common networks are some of the factors that the Banks are considering in order to improve their quality of providing mobile banking service. With respect to create interlink among banks, the memorandum of understanding has signed by three private commercial banks to launch an Automated Teller Machine (ATM) and Point of Sale terminal (POS) network in 2014 which is welcoming strategy to mobile banking services in the country. In addition, the initiation of the regulatory body to strengthen the banking industry is a good opportunity for the expansion of mobile banking service in the country.

All of the Banks found out that languages of most of the mobile phones is creating problem towards their customers as English is not the official language of the country.

CBE and Zemen are working to translate all of their mobile banking services into Amharic. Dashen and Wegagen are also looking for software companies in order to develop a package that will include Amharic language options. However it seemed that this problem could continue for a little while as no bank in the country is becoming successful to facilitate this service in Amharic or any other local languages.

Another interesting fact that most of the Banks pointed out is that customers who are using mobile banking services are using more of the banking service at one time, and they stayed longer with their preferred bank as compared to those of branch-only customers. Zemen Bank official stated that consumers who are using mobile banking are more engaged with the Bank, and as a result, this allows for deeper penetration when consumers need business services, and other products like making payments account transfers and balance inquiries.

CHAPTER FIVE

CONCLUSSIONS AND RECCOMENDATIONS

Introduction

The use of mobile banking continued to rise in the past year and appears likely to continue to increase as more consumers use smart phones or recognize the convenience of this service, and as more financial institutions offer mobile banking. The most common tasks for mobile banking users continued to be checking account balances, transferring funds, and receiving alerts. As smartphones become more common and more versatile, they can play an increasingly large role in the interactions between consumers and financial service providers, retailers, and other businesses especially in Addis Ababa and the surrounding areas.

Mobile banking is in the beginning stage for banking services in Ethiopia. It is an additional service built upon existing financial solutions which have brought a new thing for some of the financial services and reducing time and administration cost for various banking services. It has also reduced the reliance on bank branch infrastructures and even access to the selected banking services via customers' mobile devices. Most customers view the phone banking as a positive start to expand the banking services throughout the country.

This chapter presents the concluding remarks for the main findings in chapter four and important recommendations as per the main problems investigated in this research study respectively.

Conclusions

This study aims at investigating the practices, challenges and opportunities of the adoption and expansion of mobile banking service in Ethiopia. In order to accomplish the proposed objectives of the study, both quantitative as well as qualitative (mixed) research approach was employed in the study.

Based on the analysis made in chapter four the following conclusions are made on the assessment of the practices, opportunities and challenges of mobile banking service in Ethiopia.

The study identified that all of the Banks which provides mobile banking service to their customers are looking forward to expand their level of services. They are getting various benefits from this service and those benefits by providing the service. Those benefits were considered as a driving force for the adoption and expansion of mobile banking service. These facts are considered as promising starting for Banks to keep on working in the area of mobile banking.

Most of the packages that are granted by all of the Banks are similar except CBE is providing service for monthly utility bill payments for its customers. However other Banks are still working to provide same service like what CBE is offering. The main practice of e-banking among those banks that are providing the service have been for, balance inquiry, cash withdrawal, statement printing, PIN change, purchase goods and services, accessing his/her accounts 24/7 and funds transfers among others.

In view of the extent of mobile banking adoption, majorities of the banks have not adopted this technology until recent period. Most of the Banks were concentrating on the traditional services to reach and serve their clients. In general, banks in Ethiopia are trailing behind in acquiring the required quality of banking services to effectively compete in the global market.

It is identified that offering of mobile banking service has resulted in attracting high value customers, enhanced image, larger customer coverage, improvement of organizational efficiency, and load reduction etc. from the view point of the bank.

Findings revealed that the major driving forces that initiate banks to deliver mobile banking services to their customers are the existence of high competition in the banking industry, rapidly changing customers' needs and preferences, desire to improve organizational performance, desire to improve the relationship with customers, desire to reduce transaction cost, desire to cover wide geographical area, desire to build organizational reputation, desire to satisfy customers and to keep the international banking standard among others.

Lack of trained and efficient staff, and training provider institutions in the area of mobile banking system, lack of suitable legal and regulatory framework, absence of financial networks that links different banks, low level of internet penetration and poorly developed telecommunication infrastructure, high cost of internet and security issues are the main challenges for adoption of mobile banking in Ethiopia.

In addition, lack of customer awareness regarding the service is another challenge in order to provide the service. Therefore, from this, it is possible to conclude that there are challenges for the adoption of mobile banking service among those banks that are not yet adopted the system and for the sufficient adoption of the service from the viewpoint of those banks that are currently providing the service in the country.

Recommendations

Mobile banking system is a new technology in Ethiopian banking industry; however, it is an important and prominent type of service in the banking industry of the country. Because it has potential to bring greater impact on the whole banking system it initiates researchers to do more studies on it. At the same time, it is difficult and need a lot of

efforts to be adopted and accepted by the banking industry participants, so it requires a lot of efforts to succeed. Based on the above conclusion, the student researcher recommends the following points:

- ❖ Ongoing efforts by the Ethiopia telecommunication corporation to expand ICT infrastructure should be encouraged by the government and gradually the corporation should try to reduce the service charge.
- ❖ The lack of legal and regulatory framework for mobile banking services has discouraged banks from introducing these innovative payment instruments or where they have introduced, has put them at legal risk. Thus, the regulatory and supervisory body of the banking sector of the country which is the National Bank of Ethiopia (NBE), should develop more detailed laws and directives that will govern mobile banking system. This helps financial service providers to introduce innovative products in use around the world which are cost effective, efficient and safe.
- ❖ In recent years, due to its convenience, mobile banking is the latest electronic banking channel, so in this context, it is important to each bank to formulate more relevant acts, policies, and adopt operative guidelines especially when there will be interruption on the service.
- ❖ NBE should prepare various capacity building activities for banks regarding mobile banking operation and provide incentives for banks to invest rigorously on ICT and use of this service.
- ❖ All of the Banks should strengthen their ICT department by providing proper and relevant training to their IT personnel and procuring required hardware and software. They have to create separate and bigger unit in each branch for rendering ICT related operational activities under the supervision of the ICT department and should organize training for their concerned staff in basic ICT related matters in phases.

- ❖ Security and operational risks are major challenges for the expansion of mobile banking service in the banking industry. Therefore, NBE and Bankers Association should advise and collaborate all of the Banks in the context of potential breaches of security issues and interruption of telecom networks. Apart from this they must have to assist all banks in the country to prepare typical security technologies applicable to control system networks such as firewall, intrusion detection and prevention and so on.
- ❖ Service providers should continue to strengthen the customer experience and improve the quality of their services in order to attract more new customers and encouraging greater usage of mobile banking.
- ❖ Beyond transfers and payments, mobile banking system could be used for other much more facilities. Therefore, all Banks are advised to think outside the box in order to introduce various new opportunities for their customers. However, they have to be more careful when they introduce new technologies and make sure that it is permitted facility by the regulatory body of the country.

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St. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

MBA PROGRAM

Interview questions to be completed by requesting Officials of Selected Private and State Owned Commercial Banks in Addis Ababa

Dear respondent,

I am a graduate student with Master of Business Administration (MBA) at St. Mary's University here in Addis Ababa. Currently, I am undertaking a research entitled '***Mobile Banking in Ethiopia: Practices, Challenges and Opportunities***'. The aim of this study is to assess the current practice of Mobile Banking Services and to identify the major benefits and challenges in Addis Ababa, Ethiopia.

The information you provide in this regard will be used purely for academic purpose; no individual's responses will be identified as such and the identity of persons responding will not be released to anyone. So its confidentiality is highly guaranteed. Your honest and thoughtful responses for the interview are helpful as a great input to the quality of the research results. And, I believe that you will broaden your assistance by participating in the study.

Thank you in advance for your kind cooperation

Sincerely yours,

I. Personal Information

1. Name of the organization/bank _____

2. Year of establishment: _____

3. Job position _____

4. Work experience _____ years

5. Gender: Male Female

6. Educational status: A. Diploma Degree Masters

D. PhD and above

II. Questions Related to Providing Mobile Banking Services

7. If your organization started offering mobile banking services, are links and interactive programs checked for accuracy and functionality?

A. Yes B. No

8. If your response is 'No' to question #7 above, why?

9. Is security measures in place to prevent the web site information from being altered?

A. Yes B. No

10. If 'yes', to #9 above, what are they?

11. When did you start offering the service? Provide the Year/Month/Date:

12. What services (if any) are customers being charged for and how much?

13. Does the bank have procedures in place for when there is an interruption in service of mobile banking for the customer?

A. Yes B. No

14. If your response is 'yes' to #13, describe the procedures _____

15. Is mobile banking training provided to employees?

A. Yes B. No

16. Does the bank have a target market or trade area for mobile banking?

A. Yes B. No

17. If your response to #16 is 'yes', what is it? _____

18. Is any policies and procedures in place to address activities beyond the traditional trade area?

A. Yes B. No

19. If 'yes' to question # 19, what are they? _____

20. What are the different benefits does the bank realized by using mobile banking?

(Multiple response possible)

A. Attracting high value customers

B. Enhanced image

- C. Increased revenue
- D. Larger customer coverage
- V. Cost reduction
- E. Improvement of organizational efficiency
- F. Better monitoring of their customer base
- G. Others (explain)_____

21. What options are available to the customer once they have accessed mobile banking? **(Multiple response possible)**

- A. Fund transfer F. Bill presentment and payment
- B. New account set-up G. Cash withdrawal
- C. Insurance premium payment H. Purchase of goods and services
- D. Credit application I. Utility payment
- E. Balance inquiry J. Others_____

22. Do you think that the bank is sufficiently adopted the system?

- A. Yes B. No

23. If your response is 'No' to question #22 above, what are the challenges behind?

24. Is there any risks involved because of adopting /using mobile banking services to the customer?

- A. Yes B. No

25. If your response to Question #25 above is 'yes', what are they?

Thank you for your cooperation,

ANNEX-B

Questionnaire TO BE Filled by Mobile Banking Customers of Selected Private and State Owned Commercial Banks in Addis Ababa

Dear customer of the Bank,

I am a graduate student with Master of Business Administration (MBA) at St. Mary's University here in Addis Ababa. Currently, I am undertaking a research entitled '**Mobile Banking in Ethiopia: Practices, Challenges and Opportunities**'. The aim of this study is to assess the current practice of Mobile Banking Services and to identify the major benefits and challenges in Addis Ababa, Ethiopia.

The information you provide in this regard will be used purely for academic purpose; no individual's responses will be identified as such and the identity of persons responding will not be released to anyone. So its confidentiality is highly guaranteed. Your honest and thoughtful response is helpful as a great input to the quality of the research results. I am very hopeful that you will strengthen the outcome of this study by participating in responding the questions properly.

Thank you in advance for your kind cooperation.

Sincerely yours,

I. Personal Information

1. Name of the bank that you are a customer of _____

2. When did you start using mobile banking service at your Bank: _____

3. Type of Account you are operating with _____

4. Banking Service experience _____ years

5. Gender: Male female

6. Educational status: A. Diploma B. Degree C. Masters

D. PhD and above

7. Are you using mobile banking services from your Bank?

A. Yes B. No

II. Questions Related to using of Mobile Banking Services

8. If you are using mobile banking services, are the services operated accurately and without breaking out their functionality?

A. Yes B. No

9. If your response is 'No' to question #8 above, what do you think about the causes of bad services? _____

10. Do you feel that there are sufficient security measures in place to prevent the web site information from being changed?

A. Yes B. No

11. If 'yes', to #10 above, what do you think about the strong points of the security measure? _____

12. Have you ever seen any kind of improvement in terms of quality of Mobile Banking Services from your bank?

A. Yes B. No

13. How much have you been charged for using mobile banking service?

14. Have you ever been notified that there will be a disruption in service of mobile banking before or on the time of interruption?

A. Yes B. No

15. If your response is 'yes' to #14, describe the procedures as to how the bank has communicated with you _____

16. When you faced problem with mobile banking service, how could you notify your Bank about the situation? _____

17. How did you start using mobile banking service at your Bank?

A. Based on your request Your bank requested you to use it

18. If your response to #17 is 'A', why you become interested to apply for such a service? _____

19. Is there any prior requirement to use mobile banking service at your Bank?

A. Yes B. No

20. If 'yes' to question # 19, what are the requirements? _____

21. What are the different benefits that you have got by using mobile banking?
(Multiple response possible)

- A. Attracting high value customers
- B. Enhanced image
- C. Increased revenue
- D. Larger customer coverage
- V. Cost reduction
- E. Improvement of organizational efficiency
- F. Better monitoring of their customer base
- G. Others (explain)_____

22. What options are available for you once started using the service of mobile banking?

(Multiple response possible)

- | | |
|------------------------------|-----------------------------------|
| A. Fund transfer | F. Bill presentment and payment |
| B. New account set-up | G. Cash withdrawal |
| C. Insurance premium payment | H. Purchase of goods and services |
| D. Credit application | I. Utility payment |
| E. Balance inquiry | J. Others_____ |

23. Do you think that the bank is sufficiently adopted the system?

- A. Yes B. No

24. If your response is 'No' to question #23 above, what are the challenges behind?

25. Do you feel that there are risks involved in using or adopting mobile banking services in Addis Ababa?

A. Yes B. No

26. If your response to Question #25 above is 'yes', what are the risks associated with this service? _____

Thank you for your cooperation,